A
CHEMICO-MEDICAL
DISSERTATION
ON
MERCURY,
ITS VARIOUS
Preparations and Mode of Operating,
WITH
OBSERVATIONS
ON
The USE and ABUSE thereof in VENEREAL DISORDERS, &c.

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——— Res accendunt Lumina rebus.
LUCRET.

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INTRODUCTION.

MERCURY, ever ſince it has been known to be the only effectual remedy in that diſorder, on the cure of which, the health of the preſent, and welfare of future generations, ſo much depend, has employed the pens of Writers of every degree. The Phyſician, the Man of Science, the Benevolent, and the Mercenary, have all turned their thoughts and labours upon this ſubject; but though their endeavours have furniſhed us with a variety of preparations, many of which in the hands of the judicious, are attended with conſiderable ſucceſs, yet they are all more or leſs liable to objections: Some operate too much, others too little, ſome are too corroſive, others almoſt inert; and in general they are all apt to run to the ſalivary glands, and bring on a ſpitting. So that, notwithſtanding every thing that has been wrote and done on the ſubject, there is hardly, one more open to improvement: and it is only by a ſtrict attention to the operation, and the good and ill conſequences of thoſe hitherto known, and having conſtantly in view the great end to be anſwered, we can ever hope to obtain a preparation of Mercury uniformly active, generally ſoluble, free from corroſiveneſs, or too great acrimony, and diveſted of the property of running to the mouth, and promoting the excretion by the ſalival glands. Convinced, by the reaſons I ſhall hereafter give, of the danger and uncertainty of Mercurial frictions, whether applied ſo as to excite a ſalivation, or in the more modern way of extinction; I very early applied myſelf to the conſideration of the propereſt method of giving Mercury inwardly: but I hardly found any of the preparations we meet with in the Diſpenſaries, however uſeful in ſome caſes, but what was ineffectual in others; that all of them, notwithſtanding the utmoſt care in the adminiſtration, would often be attended with inconveniences, and thoſe under ſome circumſtances not inconſiderable; that though ſymptoms which refuſed to yield to one might be conquered by another; yet in weak and impaired conſtitution, and thoſe repeatedly injured, where they always proved the moſt untoward, it was dangerous to continue the patients too long under the ſame courſe, or expoſe them to a ſucceſſion of preparations: I therefore moſt anxiouſly turned myſelf to the finding out ſome new preparation of Mercury, which might poſſeſs the qualities above-mentioned of activity, incorroſiveneſs, ſolubility, and certainty, and be leſs apt to ſalivate: and if I may be allowed to judge, from the ſucceſs I have met with in treating with the preparation I now uſe, the moſt inveterate venereal caſes, many of which had reſiſted the common methods of cure, my labour has not been thrown away; as I have ever found the moſt obſtinate ſymptoms readily yield thereto, and that in much ſhorter time than under the ordinary treatment. When I conſider myſelf as a man taking part in every thing that concerns my fellow creatures, one deſtined by profeſſion to relieve thoſe miſeries, to which the ſtrength of our paſſions and the weakneſs of our nature make the human race ſo peculiarly ſubject; I wiſh myſelf at liberty to lay open the proceſs to the public; but a chain of circumſtances, with which it is not neceſſary to acquaint the world, oblige me to ſuſpend my deſigns, at leaſt for a time. However, as I had thrown together ſome thoughts on the ſubject, I have ventured to publiſh them, in hopes of their affording ſome hints to practitioners, by pointing out the great end and intention in the adminiſtration of Mercurials, and exciting thoſe whom education and experience have qualified for ſuch reſearches, to aim at procuring ſuch a preparation as may effectually anſwer theſe purpoſes, and thereby reſcue this matter from the uncertainty and obſcurity in which it has been ſo long, and ſtill continues to be, involved. At the ſame time, I have endeavoured to give a plain idea of Mercurial treatment, to enable people in general to form a juſter judgment thereof, and guard the unwary from being the dupes of the impudent and deſigning, who daily obtrude on the public their pretended diſcoveries, and without the leaſt pretence to medical, or perhaps any other ſcience, ſet up for perfect maſters of venereal treatment, ſons of intuition, and children of inſpiration! as if it were herein, as many pretend of religious myſteries, that a knowledge thereof was concealed from the ſtudious and inquiſitive, and revealed to the ſimple and ignorant. Yet, perhaps, there is hardly any one diſorder, which ſo ſtrongly calls for the aſſiſtance of the man of ſkill, as the venereal.

real. In many other diſeaſes, reſt, warmth, regimen, and copious dilution, will enable nature, by ſome ſalutary criſis, to free itſelf from the noxious or morbific matter: in venereal taints, once rooted, nature left to itſelf, will never be able to get the better, but unaſſiſted muſt fall a victim. Happy it is that we have a remedy equal thereto. But it is not the competency of a remedy alone, great as that advantage may be, that conſtitutes the phyſician; a ſufficient knowledge of the manner of applying it is equally neceſſary. The knife, ſo uſeful in ſome caſes in the hands of the ſkilful ſurgeon, is an inſtrument of deſtruction in thoſe of the raſh and ignorant. The venereal diſeaſe is often found complicated with other diſorders, from whence may ariſe a neceſſity of varying the treatment; in which caſe, it is not enough to be acquainted with the primary indications of the venereal; a man ought alſo thoroughly to underſtand thoſe diſorders under the maſk of which it may appear; to be able to diſtinguiſh, how far ſuch appearances ſpring from a venereal cauſe; how far they are to be attributed to that diſorder, with which it is complicated; to know in what caſes he may truſt to Mercurials alone, how far they may be prejudicial in the concurrent complaint, when the Mercurial treatment is to be deferred till that is removed, or how far aſſiſted by other, and what remedies. To which ſhould be added a regard to age, ſex, conſtitution and circumſtances, from a neglect of which, the beſt remedy may do harm inſtead of good, perhaps increaſe the complaint, or without removing one diſorder, be the means of bringing on another. Yet theſe conſiderations ſeldom enter into the heads of many of thoſe ſtanding in need of relief, who raſhly venture their own health, and that of thoſe who ought to be moſt dear to them, with the firſt pretender, whoſe flattering and deceitful promiſes ſtrike their deluded imagination in the prints of the day; and are too ſoon convinced of their error, when forced to reflect by dear bought experience.

In an eſſay of this kind, it was impoſſible to avoid repeating many things which have been ſaid before, the nature of the work, being in part a review, obliged me thereto. I have endeavoured to concentrate the matter, and bring it into a point, having neither inclination or intereſt in extending it.

The manner in which I attempt to account for the operation of Mercurial preparations, as far as it may be new, I have only ſuggeſted as a hint, which improved by others, may poſſibly afford ſome light in ſo obſcure a matter. That the particles of fire have a repulſive force, and the other particles of Matter an attractive one, experience clearly evinces; what may be the cauſe of this, hitherto has, and I believe ever will puzzle the moſt intelligent. In the gradation of cauſes, we muſt neceſſarily at laſt aſcend to the firſt great cauſe, that eternal ſelf-exiſting Being, *from*, *by*, *and in whom are all things*. Matter being the baſis of all natural bodies, may we not ſuppoſe, nay do not the phænomena of nature prove, that the Almighty, in the creation, impreſſed ſuch properties on the different parts thereof, as might be beſt ſuited to his Providence in the direction and guidance of this our ſyſtem, and the ſucceſſion of changes to be brought about, during its exiſtence; *viz.* that he divided it into innumerable particles of various figures, unalterable by any human force; that to the moſt minute of theſe, he gave a ſhare of motion and activity, which will be always inherent in them, and actually exerciſed whilſt they are free and under no reſtraint, with a conſtant endeavour to fly off when brought together; to others, a tendency to accede to each other and cohere, which operates at inſenſible diſtances, and will be greater or leſs, according to the nature of the particles, and the degree in which they touch each other. Whatever may be ſaid of the application, I believe there can be but little doubt, but that ſuch properties of matter actually exiſt: and perhaps, ſome who have read our beſt philoſophers on the nature and laws of attraction, and it's extent and uſe in ſolving the various phænomena of bodies, and have fully conſidered the nature of this moſt active part of matter, elementary fire, as far as we have been able to trace it, from our modern electrical experiments and chymical reſearches, may not look on the application as ſo very ideal. There are ſome points ſo very obſcure, it is impoſſible to ſay, they are ſo; all we can do is to ſhew, they may poſſibly be ſo, and ſit down contented therewith, till a greater degree of probability ſhall oblige us to alter our opinions. I confeſs cloſer obſervation, and farther experience, have ſo often ſhewn me the uncertainty of the moſt ſpecious hypotheſes, that I lay no great ſtreſs thereon; but however deſirous I may be of accounting probably for the operation of remedies, I ſhall ever receive more real ſatisfaction from a cure, though I know not how it is brought about, than from the moſt ingenious diſſertation on the manner in which it is effected; as nothing is more true than that of the wiſe man, "Hardly do we gueſs aright at the things "that are upon earth, and with labour "do we find the things that are before "us." Wiſd. ch. ix. 16.

As to the liberty I have taken of differing in ſome points, with ſome of the greateſt men of the profeſſion, I was far from being led thereto by a fondneſs for novelty, or a deſire of diſtinguiſhing myſelf. Ever open to conviction, I receive with pleaſure every opinion which comes to me ſupported by reaſon, as well as inforced by authority; but obliged to judge for myſelf, in matters of doubt, I always endeavour to abſtract from the latter, to judge more impartially from the former. To think otherwiſe would be doing an injury to truth, and precluding every avenue to ture improvement. I, with the ſame freedom give up my opinions to the world, and ſhall be much obliged to any abler pen, that ſhall convince me of my errors; which I only wiſh to know, in order to retract.

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A
DISSERTATION
ON
MERCURY.

MERCURY or Quickſilver is a metalline ſubſtance diſtinguiſhed from every other.—By it's purity and weight it agrees with the perfect metals, it's ſpecific gravity being to that of Gold as 14019 to 19936, by it's volatility with the imperfect. It differs from both in being always in a fluid or liquified ſtate, ſo ſmall a quantity of fire being required to it's fuſion, that there is always more than is neceſſary for that purpoſe in the moſt intenſe natural cold; but that it may be fixed by a ſufficient degree of cold, although Mr. Boyle in vain attempted it, we are now convinced by the famous Peterſburgh experiment, where the gentlemen of the Academy of Sciences ſo far increaſed a moſt ſevere cold, felt 25th December 1759, by artificial means, as to render the Quickſilver in the tube of a barometer flexible like a wire, and the ball ſo fixed as to bear ſeveral ſtrokes of an hammer, under which it yeilded like a malleable metal. It is the moſt diviſible of bodies for though it's ſpecific gravity is ſo great, by a proper degree of heat it may be raiſed in vapours, which if collected in a cloſe veſſel reunite into a maſs perfectly unaltered; nor can any change be induced thereby however often this be repeated. The great and indefatigable Boerrhaave after upwards of five hundred diſtillations found it the ſame as at the beginning.

It has been long known to the world for we find it mentioned by the Greek and Latin writers; it is called by Ariſtotle and Theophraſtus αϱγυϱοσ χύτοσ Fuſed Silver; by Dioſcorides, &c. ὑδϱάϱγυϱοσ or Watry Silver. Among the Latins it was known by the name of Aqua Argenti or Argentum Vivum Silver Water, or live, or Quickſilver; but ſo far were they from being acquainted with it's uſe in medicine, that we find by Dioſcorides, Galen, Pliny, &c. it was by them conſidered as a poiſon. It is to the Arabians we owe it's introduction into medicine, by whom it was uſed to deſtroy vermin, and from them it was adopted by the Europeans, about the latter end of the thirteenth century. The firſt account we meet with of it's uſe in Europe, is by Theodoricus, a celebrated phyſician about the year 1280. It was at firſt applied externally in unguents and plaiſters againſt cutaneous diſorders; and from the ſimilitude which ſome of the venereal ſymptoms bore thereto, was afterwards made uſe of againſt that diſeaſe. If the generally received opinion be well founded, that the venereal diſeaſe made its firſt appearance towards the cloſe of the fifteenth century; Mercury muſt have been applied very ſoon to the cure thereof, ſince we meet with mention of it in Gilinus de Morbo Gallico, in 1497, and ſeveral other writers about that time. Berengarius de Carpi in the army of Charles VIII. at the ſiege of Naples, is ſaid to be the firſt that uſed it with great ſucceſs for that diſorder. Nor was it very many years after that Mercury muſt have been uſed internally for the ſame purpoſe, ſince we find Hieronymus Fracaſtorius, in 1530, cautioning mankind about it, and exclaiming againſt the quacks of thoſe days, for daring to give Quickſilver, and what they call Precipitate in pills. But the firſt regular mention we have of it is in Matthiolus in 1536, who recommends red Precipitate, *viz.* Mercury diſſolved in the nitrous acid or aqua fortis, and the acid in part drove away by fire, in the cure of the venereal and other diſorders. Fallopius tells us, that the hint of the internal uſe of Mercury,

cury, was from a phyſician remarking it was given by ſome ſhepherds to their flocks to deſtroy worms, without any inconvenience. However, it was with Mercury as with all new medicines of powerful operation; from ignorance of the proper method of adminiſtering it the effects were various, ſometimes happy, ſometimes otherwiſe. Many Regulars poſſeſſed with the notion, imbibed from the Ancients of it's being a poiſon, were apt to be too cautious in it's uſe, adding it in very ſmall quantities to their ointments, the largeſt proportion not exceeding 1—9th or 1—8th, and correcting it's cold quality, in which by ſome it's poiſonous property was ſuppoſed to conſiſt, with hot drugs, ſo that it is not to be wondered at that it ſometimes miſſed it's effect: whilſt quacks and others more bold and raſh, proceeded without reſerve, rubbing it on in large quantities for twenty or thirty days together, for the circulation being at that time unknown, they had no notion of it's entering the habit equally when applied by friction as when given internally; but imputed the ſalivation and other excretions occaſioned thereby to the violence of the diſorder, thinking the more copious the evacuation the more certain the cure: ſo that we meet with accounts of Mercury being found in the bones of patients who died under the diſorder, of it's running out of a living body from a tumour or ulcer, of it's having flowed out with the blood, in the quantity of ſome drachms on opening a vein. What wonder then, that all thoſe dreadful conſequences ſhould follow that are delivered down to us, or who can be ſurprized at the dread of the unhappy patients, ſome of whom preferred all the horrid ſymptoms of the diſorder, nay, death itſelf to ſo cruel a courſe? and the firſt preparation of Mercury given inwardly, being alſo one of the moſt acrid and corroſive, *viz.* red Precipitate or the red Corroſive, and as we are informed chiefly adminiſtered by Empirics, the dangerous effects thereof might well ſeem to confirm the opinion of the Ancients, and juſtify the outcries againſt the remedy.

But we are to conſider that all theſe evils flowed not from the remedy itſelf, but from the improper method of preparing, and injudicious manner of exhibiting it; and ſince it came into the hands of men of ſkill and judgment, who could take warning from the errors of others, improve it's ſalutary, and guard againſt it's noxious effects; a conſtant experience of upwards of two hundred years muſt have convinced us, that the notion of Mercury being a poiſon, was taken up without grounds, and ſubmitted to without examination; and that properly prepared, and judiciouſly adminiſtered, it is the nobleſt remedy we are poſſeſſed of in many of the moſt obſtinate diſeaſes, and the only ſpecific in the venereal; for however people may vaunt their noſtrums or attempt to draw an advantage from the credulity of mankind, by pretending to cure this diſeaſe when rooted without Mercury: I believe I may venture to ſay, that were their remedies examined what ſucceſs they have will be found chiefly owing to this. It is what I can aſſert, as to ſome I have had an opportunity of ſeeing analyzed.

I ſhould be ſorry to take upon me to affirm that there is nothing in the vegetable kingdom capable of curing this diſeaſe; ſuch are the powers of nature, that we are far from being acquainted with their extent: but I can ſafely ſay, I have never yet known, or had it authenticated by any man of known candour, or met with any account ſufficiently evidenced, where any vegetable remedies hitherto diſcovered, ſimple or prepared, have alone radically cured this diſorder when confirmed. They may palliate, they may remove the ſymptoms, they may promote the effect of Mercury in deſtroying the cauſe; and when I allow them this, I believe it will be found I give full weight to all the accounts publiſhed of their ſucceſs. This ſeems to be the real caſe, as appears from what the celebrated Aſtruc relates of the event of the Huttonian method, or cure by ſweating, mentioned with ſo much deference by Boerrhaave, *viz.* that ſome of thoſe thought to be cured thereby were afterwards obliged to undergo a Mercurial courſe under his direction. Indeed, we have it from good authority, that many obſtinate ſymptoms which have refuſed to yeild to the common preparations of Mercury, have been cured by diet drinks of Guaicum Salſaparilla Mezereon, extract of Cicuta, *&c.* but then the queſtion is, how far has this been effected without a relapſe, where a courſe of Mercury has not accompanied or preceded? It is well known that the activity of a remedy depends on the vis vitæ by which it is put in action; and may not the courſe into which the patient has been put, have ſo far mended his habit, and improved the tone and ſpring of the fibres and veſſels, as to give a degree of activity to the Mercury in his body, which it could not receive whilſt the ſubject continued in his weak and relaxed ſtate? It is what we daily experience. The prodigious difference in the common Mercurial treatment while the patient continues under a ſcorbutic taint, and when that is corrected is well known. Hence the attention of every wiſe practitioner in treating venereal caſes, is as much to the general habit of the patient, when that is bad, as to the venereal ſymptoms. So that till ſome well authenticated caſe ſhall be produced, where a vegetable remedy alone, and in the firſt inſtance ſhall have radically cured this diſeaſe when rooted, I think I am juſtified in ſaying that Mercury is the only known effectual one.

The more we conſider the effects of the venereal poiſon, for we are ſtill totally unacquainted with it's nature, the more we ſhall be confirmed in this opinion that Mercury is it's only proper remedy. We know that this virus is ſo ſubtle and penetrating, as by itſelf to be imperceptible by any of our ſenſes; but, that it has a diſpoſition to unite itſelf to the lymph, or fattiſh or mucous gelatinous part of our humours; that it inſpiſſates or coagulates them, whence tumours and inflammations, *&c.* that theſe in time growing acrimonious, ulcerate and corrode the more fleſhy or ſolid parts, that the ichor or pus, which is diſcharged, partakes of the property of the original virus, and becomes capable of propagating the infection ad infinitum; that the activity of it is ſuch that it pervades and affects the cellular ſubſtance in the inmoſt viſcera, and to the very ſubſtance and marrow of the bones. Hence will appear the neceſſity of exhibiting ſuch medicines as may preſerve their nature and qualities unaltered, by the different organs through which they are obliged to paſs; and yet, are of ſuch a degree of diviſibility as may paſs thoſe infinitely fine tubes through which they muſt be carried to act on the morbific cauſe, or matter lodged in the remoteſt receſſes of the body. The parts of vegetable and animal ſubſtances are generally broke down and deſtroyed by the action of the viſcera and veſſels, ſo as to be changed and aſſimilated to our fluids: metals retain their original qualities and nature, till expelled out of the body, as we find in iron, the particles of which are often found on analyzation in the red parts of the blood, in the urine, in ſtones taken out of the body, *&c.* Hence the ſingular efficacy of preparations from mineral and metalline ſubſtances, and of theſe none poſſeſſes ſuch valuable properties, or in ſo high a degree as Mercury.

Let us therefore, lay aſide our apprehenſions of any deleterious effects from Mercury, as contrary both to reaſon and experience. It has been given to children in their tendereſt age, to deſtroy worms, without their receiving the leaſt harm. M. Le Duc, a French Phyſician, who made the tour of the Levant, informs us, that the ladies of Smyrna have a common cuſtom of ſwallowing ſome drachms of Quickſilver every morning, to give an agreeable plumpneſs to their perſons, a delicacy to their ſkin, and a freſhneſs to their complexions. Dr. Dover gives us inſtances of it's being taken in conſiderable quantities with good effect. There is reaſon to believe that the preparations of ſome of our profeſſed inoculators for the ſmall-pox are Mercurial. It has been found to be the beſt preſervative againſt the dreadful effects of the bite of mad beaſts. Mr. Boyle remarks that thoſe who inhabit where there are mines of Quickſilver are hardly ever troubled with the plague. The ſame remark is made by Beguinus, who tells us that when the places around have been afflicted, the ſpots where the mines were have eſcaped; and during the plague in the Gevaudan, the phyſicians ſent thither by the king of France employed Mercurials with ſucceſs.

It has been a matter of controverſy among different writers, how far Mercury or Quickſilver in it's common ſtate may be adulterated, or have heterogeneous matters mixed therewith. Some pretend that unleſs purified in a ſpecial manner, it has always ſome arſenical particles from whence its deleterious effects;

that freed from theſe it loſes it's ſalivating as well as every other noxious quality; and ſome give various proceſſes for this purpoſe. Certain it is, that it may be adulterated with lead or biſmuth to a certain degree, and ſtill retain its fluidity, ſo as to paſs through leather, and even carry up theſe with it in diſtillation; but this may be diſcovered by a livid appearance, and a ſmall variation of it's globular form. If it be well triturated with vinegar and ſalt, and afterwards well waſhed with water and ſublimed from iron filings, the reſult will be a bright fluid Mercury, which if expoſed to the fire in an iron ladle will totally evaporate, without leaving any ſpot, ſufficiently pure for external or internal uſe; for whatever may be pretended no matter can after this be ſeparated from it, by any proceſs now known.

Mercury in it's crude or fluid ſtate has very little ſenſible effect applied externally or taken inwardly, unleſs by accident, or in ſome particular conſtitutions; for it's aggregation or the tendency of it's integrant parts to each other is ſo ſtrong, that the ſtomach or ſalival gaſtric, or other juices of the body have very little action on it: ſo that it is generally voided in the ſame quantity and condition as when ſwallowed: but when it's parts are divided and kept aſunder by any ſubſtance, it's ſurface being increaſed as it's parts are multiplied, it is then enabled to act, and be acted on by the ſtomach and different organs, and produces very ſenſible and often very powerful effects.

The immediate effects of Mercury are ſtimulant and deobſtruent. It raiſes the pulſe, attenuates the inſpiſſated humours, and increaſes the ſecretions and excretions of every kind. According to the ſtate in which it is introduced into the body, and the circumſtances under which it is exhibited, it proves emetic or purgative, ſtimulates the diſcharge through the kidneys or by the ſalivary glands, or may be carried into the remoteſt parts of the habit, and promote either the more groſs or inſenſible perſpiration. That it produces theſe effects we know from experience, but ſuch is the wonderful compoſition of the animal machine in which the effects are produced, and the minuteneſs of the particles producing them; that it is not ſo eaſy to aſcertain the phyſical manner in which they are brought about; there being no remedy about which more has been wrote, on which authors have more differed, or the mode of operation of which remains more unſettled at this day: and it is much eaſier to refute any opinion hitherto ſuggeſted than eſtabliſh one which ſhall be perfectly ſatisfactory.

The explanation given by many of it's mode of operating in venereal caſes is, that the venereal poiſon being of an acid nature and coagulating, the fluids is counteracted by Mercury, which is of the alcalious kind, and having an affinity with the acid joins itſelf thereto in the body, and deſtroys it's action by neuteralizing it. But this ſeems to want little refutation, for beſides that it ſuppoſes what ought to be proved; the acid nature of the virus, and the alcaline of the Mercury: how can we hereby account for the effects of Mercury, when united with mineral acids in exceſs, which muſt be exceedingly ſtronger than any acid in the body; yet the efficacy of ſuch preparations in removing the diſorder is vaſtly ſuperior to that of Mercury in it's uncompounded ſtate. Neither is the hypotheſis of Dr. Cheyne, adopted by ſo many eminent men, more maintainable, *viz.* That Mercury being of ſuch ſpecific gravity, and extremely diviſible, it's parts always retaining their globular form are carried into the circulation, whereby the momentum or force of the circulating blood and fluids is increaſed by their carrying ſuch weighty particles, and they are thereby enabled to attenuate the inſpiſſated lymph and humours, overcome reſiſtances, and break through obſtructions. A little reflection will ſhews us, that this opinion ſpecious as it may at firſt appear, is no leſs erroneous than the other, and perhaps more dangerous, as tending to confirm the neceſſity of frictions, in order to introduce a large quantity of Mercury into the habit to produce an adequate effect. For we muſt either conſider the Mercury, when introduced into the habit, as exiſting in globules heavier than the fluids, in which it is ſuppoſed to circulate, in which caſe it can hardly be conceived how it can enter the lacteals and be carried uniformly through the veſſels, as it muſt then often be obliged to mount againſt it's natural gravity, which would rather cauſe it to be precipitated at different inſtants, more eſpecially if the ſtimulus of the veſſels and velocity of the fluid were not at the ſame time ſo far increaſed as to overcome the dead weight thrown into them: or we muſt conſider the diviſion of the Mercury as carried ſo far, that the particles thereof may be able to float in the fluids according to that well-known rule, *That the ſolidity or gravity of bodies decreaſes in a triplicate proportion of their diameters, but the ſuperficies only in a duplicate,* ſo that if the diviſion be carried far enough, Mercury may be rendered lighter than air and float therein. And it is from it in this ſtate, we experience the moſt powerful effects, which could never be, did it's action depends on it's gravity, for were this the caſe the greater the diviſion the more inert it ſhould become. Gold is of much greater ſpecific gravity than Mercury, being thereto as 19,936 to 14,019, and may be ſo far divided as to be ſuſpended in the lighteſt known liquor, æther; yet who ever found the ſame effects therefrom as from Mercury? Beſides, did the ſalutary effects of Mercury in the venereal and other diſorders depend on this mechanical operation, it would follow, that it could not cure them, but in as much as it preſerves the globular form, by virtue of which it is ſuppoſed to operate: yet experience convinces us that we obtain theſe ſalutary effects much ſooner, and from infinitely ſmaller quantities of ſome preparations of Mercury, in which this configuration is deſtroyed, and the ſpecific gravity diminiſhed. Neither can we conceive how the very ſmall quantity of Mercury prepared without addition, *viz.* a few grains of the black powder obtained by long triturating or agitating Mercury, or of Mercurius Calcinatus can produce in their mechanical ſenſe, ſuch effects on the maſs of circulating fluids of ſo many pounds weight. That Mercury does increaſe the velocity of the fluids is beyond a doubt, but then it does it in a different way, by ſtimulating the fibres and veſſels, whereby their contractile and propulſive force is increaſed. Nor is this mechanical explanation helped by what paſſes when Mercury is united, or combined with acids, or in a ſaline ſtate. For how can we ſuppoſe that the Mercury acts by it's gravity in impinging the ſpiculæ or lamellæ of the ſalts, when the quantity of the compound is ſo trifling, and it's parts ſo divided as to float in water; to do which it muſt be rendered lighter than the fluid? Beſides, the ſalts are either united with the Mercurial particles till they come into the habit, where the union is diſſolved and the Mercury let looſe, when it will only act like Mercury uncombined, or they are carried and continue in the ſtate of combination in the habit, when the extreme diviſibility of it muſt be deſtroyed, as well as it's power of circulating by the ſpiculæ of the ſalts, and yet we find that theſe preparations much ſooner ſhew their effects on the ſurface than Mercury given in globules. Neither can we hereby account in any wiſe for the evidently ſuperior activity of the preparations of Mercury with exceſs of acid, taken in ſo ſmall a quantity as Corroſive Sublimate, or that ſtill more violent preparation of Mercury mentioned by Boerrhaave, &c. under the name of the Fiery Oil of Mercury, *viz.* Mercury diſſolved in the vitriolic acid, and the calx remaining on evaporating, the acid re-diſſolved repeatedly in freſh acid till it is as fully charged therewith as it can be, and changed into an oil, the ſmalleſt quantity of which, he tells us, will deſtroy the ſtouteſt man, by tearing his ſtomach to pieces. Did the operation here depend on the Mercurial particles by their weight impinging the ſpiculæ of the ſalt, by the addition of freſh Mercury, their action ought to be increaſed: whereas by this means theſe preparations are dulcified and rendered mild. Hence content with facts, we muſt acknowledge our inſufficiency to account for the operation of Mercury, or ſeek ſome more probable method of accounting for it.

In the management or treatment of Mercury, either by trituration, fire by itſelf, with other ſubſtances, or in the combination of it with acids, does it retain it's original nature and properties unaltered, in ſubſtance it's component or integrant parts, being, perhaps, only ſomewhat differently diſpoſed, ſo as to have it's virtues more eaſily drawn out or put in action, by the natural powers when taken into the body? Or does it receive from the ſubſtance with which united ſome additional qualities, which it did not poſſeſs before, ſo as to have it's effects referable to the *tertium quid*, the new compound reſulting from it's combination with the ſubſtances to which united? Or may it not, beſides it's primary action as a compound have different operations on account of the ſubſtances which help to compoſe it, which though they may be only conſidered as parts in regard to the whole, may ſtill retain their original nature? Or may not the compound beſides ſuch groſſer ſubſtances as are known to enter it's compoſition, collect in the proceſs ſome ſubtile active matter, too minute to be perceived by our ſenſes, by which the powers and virtues of the other ſubſtances may be augmented, and the whole acquire if not new properties, at leaſt a greater degree of activity? Is not this latter moſt probably the caſe; and does not the ſuperior activity of Mercury when prepared, to what it is in it's crude ſtate, depend upon a quantity of that fine ſubtile æthereal matter, elementary Fire, which though it eſcape our ſight, we well know from electrical and other experiments is univerſally diffuſed around us, actuating all nature, and permeating every body the moſt ſolid as well as the moſt fluid, which the Mercury by it's different modification, or new contexture may be enabled to attach and combine with itſelf, by which the fine active part of the Mercury wherein it's virtue reſides may be drawn out, and if I may be allowed the expreſſion, ſpiritualized; ſo that the compound may act as an antidote to the venereal poiſon, by checking and deſtroying it's activity, and at the ſame time attenuate and diſſolve the coagulated humours, and give ſuch a ſtimulus to nature as to enable her to throw off whatever is offenſive?

The only groſs ſenſible ſubſtances entering the compoſition of Corroſive Mercury Sublimate for example, are Mercury in it's moſt divided ſtate, and the highly concentrated ſpirit or acid of ſea ſalt: yet, the effects there are infinitely ſuperior to what would be produced, by many times the quantity of theſe ingredients given apart or together, unleſs united by the fiery proceſs. And did the activity of a body depend on the acid, as ſuch, entering it's compoſition, it could never be increaſed by depriving it thereof: but that this is the caſe, experience convinces us. That there is a conſiderable quantity of acid in Mercurius Dulcis or Calomel, no one can doubt, ſince theſe are nothing more than Corroſive Sublimate triturated with 3—4ths of it's weight of crude Mercury and repeatedly ſublimed: yet if on any portion of theſe pulverized, a quantity of any fixed or volatile alcali be poured ſufficient to neuteralize the acid, and the neutral ſalt be afterwards waſhed away, a few grains of the powder which will be precipitated, or remain from this operation, will produce ſtronger effects than many times the quantity either of *Calomel*, or *Mercurius Dulcis*. That Mercury acquires a conſiderable degree of activity from it's ſolution in acids I certainly admit: but then I cannot help thinking it acquires this from that æthereal matter from whence the acid itſelf derived it's cauſticity; and which many naturaliſts look on as the efficient cauſe of taſte as well as of colours: and it is only from it's being able to collect this in greater quantity when diſſolved in acids, or in the courſe of the treatment, which is liable to be too ſuddenly let looſe in the ſtomach, &c. that it's corroſiveneſs, ſuperior violence, or deleterious qualities ariſe; and to the ſolution of Mercury in every other acid, but the niterous, the concurrence of a ſtrong culinary heat is required.

That Mercury is capable of acquiring a conſiderable degree of activity, without being treated with acids is clear, from the activity of the grey or blackiſh powder produced by triturating it by itſelf, or expoſing it for ſome time to a heat of 180 degrees, by which from perfectly inſipid it acquires a ſtrong metalline taſte, and the purer the Mercury, the greater will be the quantity of this powder: from Mercurius Calcinatus, or Precipitate per ſe, which as all chymiſts know is nothing more than Mercury expoſed without any addition to as ſtrong a fire as it can bear without flying off in vapours in flat bottomed veſſels, with long necks or tubes, with a ſmall opening at the top of each to let in the air, and there kept till it is reduced to a red powder, which it will be in two or three months. I know it is aſſerted by ſome, that Mercury treated in this manner, contracts a quantity of acid from the air with which it is in contact by means of the aperture at the top of the tube: but that this is without foundation appears from the ſame effect being produced in veſſels hermetically ſealed, tho' it will require a much longer time, *viz.* eighteen months or two years; ſo that all the proof to be brought from thence is, that the concurrence of the air greatly promotes the operation; which it may do by helping to reduce it to a proper ſtate of diviſion. Hence the proceſs may be conſiderably ſhortened by making uſe of the black powder obtained by trituration, or any Mercurial Precipitate thoroughly ſeparated from its acid; becauſe it is then in a ſtate of great diviſion.

The reaſon given by others for the activity of Mercury in Precipitates, and treated without acids is, That being then, as I have juſt mentioned, minutely divided, it is apt to be put into a ſaline ſtate in the body, by uniting with the acid humours it may there meet: but theſe will operate no leſs powerfully, given when the humours are in the moſt alcaline ſtate, or joined with abſorbents or alcaline ſubſtances. Beſides, how is the greater weight and larger bulk of Mercurius Calcinatus accounted for, ſince it acquires both in the proceſs? Theſe muſt be from the addition of ſome ſubſtantial matter; and to judge from the effects, what is this more likely to be than that fine æthereal ſubſtance, which is the great ſpring of motion and life, the only active body in nature and the cauſe of activity in others?

This matter, elementary Fire, may be conſidered in two points of view; as free and diſengaged, not conſtituting part of any body, in which caſe it is infinitely active, eſſentially fluid, the cauſe of fluidity in other bodies ever in motion, and ſo far from being poſſeſſed of an attractive power or tendency to unite with other particles of matter, that it is poſſeſſed of a repulſive force: and as combined with and forming part of mixts or compound bodies as a conſtituent part or principle thereof: in which caſe theſe properties are checked, and tied down by other principles more groſs, which likewiſe enter the compoſition as conſtituent parts. Whilſt fire thus continues united, it ſeems to have loſt all it's diſtinctive qualities: but this is not peculiar to fire, it is common to all the other elements when forming mixts or compounds. Thus air when it forms part of a body has no elaſticity, water wets not, *&c.*

It may not at firſt, perhaps, be eaſy to conceive, how pure elementary Fire, being of the nature above deſcribed, the parts of it ever in motion, without any diſpoſition to unite with each other, or with the particles of other bodies, but with a conſtant niſus or endeavour to fly off, ſhould nevertheleſs be united in a ſolid, ſubſtantial manner, in quality of conſtituent principle, and cloſely adhere to the integrant parts of other bodies, ſo as to be deprived of the mobility, fluidity, and all that activity ſo otherwiſe eſſential to it. But we are to conſider, conſtant experience proves to us, that there is in other parts of matter a general tendency to unite and adhere, not only to that which exiſts in more ſenſible maſſes, operating at a diſtance, known by the name of gravity, or centripetal force; but that there prevails, inter minima naturæ, an attractive force or power, whereby the minute particles of which bodies are compoſed, adhere together in a degree much ſuperior to that of gravity; which power is only exerted, or takes place at, or exceedingly near, the point of contact, ſo as to be little or none at any ſenſible diſtance. This is called the attraction of coheſion, and is the baſis of moſt chemical operations which are chiefly employed in the ſolution and compoſition of bodies, and it is greater or leſs, according to the ſhape of the particles, as they thereby admit of being brought to a cloſer or leſs intimate union, and touch each other in a greater number of points. I ſhall not attempt to aſſign the cauſe of this, it is ſufficient for my purpoſe, that ſuch powers exiſt and produce effects in the order of nature. Now, as the more minutely a body is divided, the more ſurface it will always exhibit, and of courſe, the more this attractive power be increaſed: may not the activity of this very ſubtile ſubſtance, elementary Fire, be itſelf the chief inſtrument of ſuch union, by dividing the parts of bodies far beyond what any other agent can do? And as Mercury is the moſt diviſible of bodies, may it not be peculiarly ſuited, in conſequence of it's parts being ſo exceedingly divided, and it's attractive force increaſed in proportion, to overcome the activity of this matter, and retain and fix ſome of it's particles, when they come fully in contact with it's own moſt minutely divided particles ~~thereof~~? where, in conſequence of ſuch junction, they will remain tied down 'till, by the afflux of this ſame matter in larger quantity, or violently agitated, or any other means, whereby this attractive force is overcome or leſſened, they may be again disjoined when they will, fly off by their repulſive force. Whether it be by this means, or any other, we certainly ſee the moſt wonderful combinations take place. How great a part air forms of mixts, how much of it is conſtantly abſorbed and regenerated, and what diſorders ſpring from it's being too abundantly let looſe in the body, is well known. May not a like combination take place with regard to fire? That it does in combuſtible bodies is now generally admitted. But tho' both air and fire have been long conſidered as two of the Peripatetic Elements, it is but lately that any attempts have been made to ſhew, that they enter bodies as conſtituent parts or principles; and ſtill, the manner in which they are combined, particularly the latter, is but very imperfectly underſtood.

The degree of activity Mercury acquires by trituration, *&c.* without the concurrence of the heat of the furnace, may proceed from the ſame ſource as when expoſed by any proceſs to culinary fire; ſince daily experience convinces us, that fire is collected both by external friction, and ſtriking bodies againſt each other. The heat excited by theſe means is even comparable to that of burning-mirrours;

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for, from the ſtroke of a flint and ſteel is produced a vitrification, the effect of the ſtrongeſt heat known. It is likewiſe collected by the inteſtine attrition and colliſion of the inſenſible particles of bodies, and takes place in fluid bodies, the integrant parts of which are exceeding hard, as well as in thoſe more rigid ſubſtances, the aggregation of which is ſtronger ; as is manifeſt in fermentations, efferveſcences, and diſſolutions. Here, as well as in the former caſe, the heat is proportioned to the rapidity with which the bodies, or their parts, re-act on each other ; and is ſo great in many mixtures as to produce a burning heat, and ſometimes a flame : ſo that, by the prodigious increaſe of the parts of Mercury, minutely divided by long-continued trituration, and the quantity of contact procured in conſequence thereof, who can determine how much of this elementary Fire may be combined therewith, or by internal attrition in it's ſolution in acids, as well without the aſſiſtance of external heat in the nitrous, as with the concurrence thereof in the vitriolic, marine, or any vegetable acid?

Suppoſing then the above combination to take place with regard to the Mercury, which, to me, appears as plauſible as moſt hypotheſes hitherto ſuggeſted, we ſhall meet with no great difficulty in accounting for the various effects of the different preparations of Mercury, as well, perhaps, as of ſome of the moſt active mineral poiſons. For we muſt conſider the unalterable nature of fire, that it's repulſive power is never deſtroyed, it is only tied down and ſuſpended by a ſuperior force during it's union or combination with other elements, as a conſtituent principle or part of bodies: that as it exiſts in a larger or ſmaller proportion, or as the bond or union ariſing from it's being combined with a ſmaller or greater quantity of the other elements, is more or leſs ſtrong, ſo it will be more or leſs liable to be diſſolved by any power acting thereon; and, whenever this union is by any means deſtroyed, or rendered weaker than the niſus, or endeavour of the particles of fire to get looſe, this latter will exert itſelf, and the ſubtile matter will fly off with violence; for, contrary to the nature of all other parts of matter, which the cloſer they are brought in contact, the more ſtrongly they cohere; the nearer the particles of fire are brought together, the more ſtrongly they repel each other. Thus in Corroſive Sublimate, and all other combinations of Mercury, with exceſs of acid, as they are commonly called, *viz.* where the Mercury is fully charged with this active ſubſtance, the quantity of Mercury being leſs in proportion, the union is of courſe leſs ſtrong, conſequently more liable to be deſtroyed or diſſolved in the ſtomach, when this very active matter will be let looſe in too large a quantity, or too ſuddenly; whence in flammations, gangrenes, ſpaſms, and all that horrid train of nervous and dreadful ſymptoms,

toms, we find in thoſe who have had the misfortune to have taken it in any quantity: but when this union is ſtrengthened by a larger quantity of Mercury, and cemented by repeated ſublimations, as in Mercurius Dulcis, &c. the ſum of the attractive powers of the Mercury, becomes greater than the repellent in the particles of fire, even aſſiſted by the ſtomach and juices, and the compound becomes inſoluble; or this matter is let looſe only in ſmall quantities, and by ſlow degrees, ſo gently ſtimulates, or acts chiefly by it's weight, and goes off by ſtool: though we find, that the greater ſolutive power of the ſtomach in ſome particular conſtitutions, or the accidental ſtate of the juices, may ſo far diſſolve theſe, as to occaſion great variety in their operation, and ſometimes be the means of their producing ſtronger effects than could have been wiſhed, even in very moderate doſes, as many perſons muſt have found in their practice.

But though this ſhould be allowed to account for the various effects and degrees of ſtimulus, in the different preparations of Mercury, ſtill we are left in the dark as to it's antivenereal virtue.

The ſeveral evacuations procured at different periods by any other than Mercurial remedies, under whatever circumſtances, having never been found to cure this diſorder when in a confirmed ſtate; and as we are convinced by experience, that the ſalutary effects, even of Mercury, do not depend on the quantity of ſenſible evacuation produced thereby, ſince it generally loſes it's effect when this is brought on too ſuddenly, and many who have been by this means diſappointed of a cure, have afterwards obtained it by the ſame remedy, when given ſo as to occaſion little or no ſenſible evacuation; we may reaſonably conclude that the operation of Mercury in this diſorder is primarily corrective. This effect it may produce by it's action on the maſs of humours in general; but were this the caſe, one ſhould imagine it ſhould firſt produce an alteration in the blood; yet, Dr. Cullen tells us in his lectures, that blood drawn in the height of a ſalivation in no wiſe differed from that drawn in a ſound ſtate. For my part I can't help thinking, obſervation rather warrants us in concluding the action of Mercury to be immediately on the venereal virus. That it's virtue conſiſts in ſome property or quality, different from what has been hitherto diſcovered, difficult perhaps to aſcertain, ſince it may be too ſubtile and volatile to be obtained apart, which may be more or leſs drawn out, or diſpoſed to be put in action by the different proceſſes the Mercury has undergone: that this, being of equal ſubtility with the venereal virus, is able to penetrate into the remoteſt receſſes of the body, in which it may be aſſiſted by the very active matter joined therewith, act immediately on the venereal miaſmata, and ſo decompoſe, alter or change them, that their activity may be deſtroyed: when the ſuperfluous matter, that may have been collected, as well as the Mercury, will be carried off in the common courſe of excretion, either by the force of nature, or the aſſiſtance of common remedies; but Mercurials have generally this ſingular advantage, that whilſt they attack the virus in it's principle, they at the ſame time remove the ſymptoms. What I have above ſaid of the activity of Mercury being drawn out, or increaſed by different proceſſes, is not peculiar thereto; we experience the like in other metals, and have the ſtrongeſt proof of it in that ſemi-metal antimony, which when crude, may be taken in conſiderable quantities, but when treated with acids or by fire, becomes in the ſmalleſt quantity the moſt active and violent of ſubſtances; as we find from the butter and glaſs thereof.

This opinion that the operation of Mercury is immediately on the venereal poiſon, is confirmed by what paſſes in every one's experience. Mercury topically applied to venereal affections will generally cure them. I aſk how they are cured in this caſe? To ſay the poiſon is repelled into the habit, is ſaying nothing without proof; nay the proof here is againſt it, ſince we find that ſymptoms which have long reſiſted Mercury given inwardly, readily yield to it when applied outwardly. That freſh ſymptoms may appear, and ſometimes in the ſame place is not unnatural; for where the poiſon is not univerſally deſtroyed, it will always be making it's appearance or producing it's effects; and it is not difficult to conceive, that the diſorder is as likely to break out again in parts weakened, and diſpoſed to receive the infection from a former injury, as in a freſh place. So when the venereal poiſon has been collected in any quantity, in any particular ſpot, the adjacent parts are generally more or leſs affected; and if any part ſhall have eſcaped the effect of the remedy, it will continue to infect and ſpread: it being the chief property of this poiſon to change the humours into it's own nature. Add to which, that the preparations of Mercury generally uſed in topical applications, are very ill calculated for the purpoſe, being either Mercury in ointment, cerate, rubbed down with terebinthinates, honey, the yolk of an egg, *&c.* or Calomel, or ſome of the more corroſive preparations. As to the former of theſe, the greateſt part of the particles of the Mercury are only temporarily divided by the medium, and it's union with the venereal poiſon, and the humours with which that is blended, is hindered by the unctuoſity of the lard or cerate; or the preparation is inſoluble as in Calomel: and though the ſolutions with exceſs of acid are not ſo liable to theſe objections, they are too dangerous from their cauſticity; and, by the inflammation they induce, prevent the effects we might otherwiſe poſſibly receive from them: but that a proper preparation of Mercury topically applied will cure the diſorder radically, when the infection is recent, the diſorder local, and within the reach of an immediate application, I am convinced by repeated experience; having often by this means cured Gonorrhoeas in a few days. And though Mercury is thought to excite and increaſe the inflammation, and for that reaſon is ſeldom uſed till the inflammatory ſymptoms are abated; yet I have uſed it in this manner when the inflammation has been very great, and hourly increaſing, and found this alone would remove it, when all the common applications had failed. For the inflammation in theſe caſes is only a ſecondary ſymptom, the conſequence of the inſpiſſation of the humours, or the congeſtion cauſed by the virus, by which the diameters of the veſſels being diminiſhed, the arterial fluids meet with a difficulty in their paſſage, from whence muſt neceſſarily ariſe a degree of attrition, which will be always more or leſs, as the reſt of the blood preſſes with more or leſs violence.

Now I grant that nothing can be more likely to increaſe the inflammation than Mercury given internally, becauſe in this way it's prior action is on the blood, whoſe velocity it increaſes, conſequently it's momentum and preſſure, and it can never operate on the cauſe of the diſorder, till it comes to be applied thereto in the courſe of the circulation: but when it is applied directly to the parts affected, the caſe is different, it's immediate action is on the venereal virus, it checks the activity of the coagulating cauſe, attenuates and diſſolves the congeſted humours, and at the ſame time gives a proper ſpring to the fibres and veſſels: and the only caution requiſite is to guard againſt too ſtrong a ſtimulus, which I found I could eaſily do; as, though I made uſe of a preparation exceedingly ſubtile and penetrating, and in a watry menſtruum, yet I took care to avoid all the ſaline preparations and corroſive ſolutions, from the acridneſs and cauſticity of which I ſhould have expected the moſt dreadful conſequences. And though whenever the application was ſufficiently early, the diſorder was almoſt inſtantaeouſly checked, ſo that the common ſymptoms hardly ever ſupervened; and even when it had made ſome progreſs, and the ſymptoms became urgent, they were removed in a much ſhorter time than in the ordinary way, yet I never found any ill effects follow therefrom; the ceſſation of the ſymptoms being only the conſequence of the deſtruction of the morbific cauſe. But before any one can think of uſing ſuch a method, he ought to be thoroughly acquainted with the nature and ſeat of the diſorder, and by no means to make uſe of any thing repellent or aſtringent, otherwiſe he will be liable to do infinite miſchief; ſo that the greateſt care and attention are required in treating caſes in this manner; and that advice of the great Boerrhaave, relative to the uſe of Corroſive Sublimate, *Abſtine ſi methodum neſcis*, is no where more applicable than here.

As great advantages may be derived from topical remedies in this diſorder, when uſed with judgment, and infinite evils follow, when they are applied without ſkill, I ſhall conſider this matter a little more fully.

The venereal poiſon has this in common with the morbific matter of moſt contagious diſorders, that whenever it enters the body, it has a power of aſſimilation, or changing the humours of the body with which it unites into it's own nature; but it is leſs volatile and ſubtile than that of many of them, ſo as not to be communicable, but by contact with the inffected parts; and requires that thoſe which receive it ſhould be eaſily permeable, and generally heated or diſpoſed by agitation to imbibe it. Hence many have concluded, that to become ſenſible it muſt be involved and fixed by ſome viſcid mucous humour, and that it's effects are never felt 'till, by it's union with ſuch, it is fixed locally in the parts firſt expoſed, or comes to be depoſited and united therewith in ſome particular ſpot in the courſe of the circulation.

The learned Aſtruc ſeems to think that the maſs of humours can never be affected, unleſs the poiſon ſhall have previouſly worked it's effects in the parts immediately expoſed; and that it is from this that the poiſon is abſorbed into the habit: but this ſeems, in ſome few caſes, contrary to experience, ſince we ſometimes meet with inſtances of the poiſon being abſorbed by the lymphatics, and fixed in the inguinal glands, cauſing tumors or buboes, without any previous infection of the genitals, as well as ulcerations in the throat, *&c.* and puſtules and ſpots on the ſkin in the firſt inſtance; but theſe are rare, and the obſervation is generally true, that the infection firſt ſhews itſelf in thoſe parts which have been expoſed to immediate contact. Certain it is, that as the venereal virus ſometimes lies dormant a conſiderable time in the habit, without ſhewing itſelf locally, ſo it is often detained a long while in ſome particular place, without infecting the reſt of the maſs.

As the parts appropriated to generation from their fungous texture, and the nature of the humours with which they abound, are extremely fitted, for imbibing and retaining the venereal miaſmata; it is here they generally work their firſt effect, and unleſs they are happily expelled by the power of nature in a ſhort time, they will always bid defiance to every method of cure but Mercury. The moſt common ſymptom is the gonorrhoea, or a diſcharge of a corrupted, diſcoloured matter, from the parts of generation. Writers generally divide this into four or five kinds, but they differ only, in the more or leſs, as the diſorder is deeper ſeated, or more parts affected. There is a diſtinction, where the venereal poiſon has inſinuated itſelf, and is fixed in the corpora cavernoſa, or fungous body of the penis, ſo that the matter is diſcharged, or may be preſſed out externally from behind the glands, and where it flows from the cellular ſubſtance of the urethra, and the diſcharge is from within. At the beginning, the diſorder is very rarely deeply ſeated, or is there hardly any ulceration. The extraordinary quantity of the mucus diſcharged is occaſioned by the irritation, and the difference of colour, *&c.* is from the change made therein by the venereal virus, we find ſomething ſimilar in the diſcharge from the noſe in a cold. Whilſt the poiſon is ſheathed hereby, and the matter carried off in due quantity, there is leſs danger of the maſs being infected; and it is here it may be deſtroyed by a proper application without any danger. It ſeldom, at firſt, at leaſt in common caſes, reaching beyond the glands that are ſeated near the orifice of the urethra; but if the infection ſhall by neglect have been ſuffered to make it's way higher up, and have fixed itſelf deeply in Cowper's glands, or reached the proſtate, *&c.* it may then be doubtful, particularly, if accompanied with ulceration, and a degree of fiſtulous induration, which is too often the caſe: and a mere topical application is not to be truſted to here, though, properly managed, it will conſiderably haſten and promote the cure. The above with due variation is applicable to the female ſex, whoſe conformation renders them rather fitter ſubjects for topical treatment than men. The common method of cure in the gonorrhoea, is by what is called the antiphlogiſtic courſe, *viz.* to pay at firſt almoſt the whole attention to the inflammatory ſymptoms. The patient is to be kept extremely low by the lighteſt and moſt cooling diet, all violent exerciſe to be carefully avoided, blood drawn according to exigency, the body kept open by gentle purges every other day, lubricating drinks and diuretics given in proper quantities to ſheath the parts from too great iritation, and enable nature to expel the poiſon; and when from the colour and conſiſtence of the matter there is reaſon to think this effected, the cure is cloſed by bracing and ſtrengthening the parts. In good habits where the patients are governable, untainted by former injuries, and poſſeſſed of a ſhare of native vigour, this will generally be effectual, and is an happy method of cure: but in weak enervated conſtitutions, and in thoſe too apt to deſpiſe and laugh at ſo ſtrict a regimen wherein the leaſt exceſs is often fatal; what will be the conſequence? In ſanguine habits on any exceſs, debauch, or violent exerciſe, the inflammation will be increaſed, perhaps the running ſtopt, the infection farther taken up into the habit ſo as to occaſion ſwelled teſticles, buboes, or a confirmed lues, and in billious, melancholy irritable habits the inflammation may be abated by theſe means, and the running brought to a certain colour and conſiſtence beyond which it often can never be improved by this courſe, and purging which was of uſe in the beginning ſhall now only aggravate, when it is to be attacked by frictions with Mercurial ointment, by which the virus ſhall perhaps be ſo changed as no longer to be infectious;

but whether ulcerations may have been formed the callous edges of which prevent their healing, or from whatever cauſe, the running will go on ebbing and flowing of a certain fixed yellow, when it paſſes for a gleet, and is to be attacked by balſamics, agglutinants, and aſtringents, by which the running is diminiſhed for a time, an imperfect cicatrix brought on, and the affair patched up; liable however to break out on the leaſt debauch or intercourſe even with a ſound ſubject, ſo as to leave a doubt, even with the experienced, whether it is not a freſh infection. But the difference I have obſerved in ſome of theſe caſes which have come under my care, is that there is generally leſs inflammation, the diſcharge almoſt immediately enſues the congreſs, is attended with leſs pain, rather more dull and itching chiefly on ſome particular ſpot, and the colour and conſiſtence of the matter not liable to change, and is ſuch as is diſcharged towards the middle or cloſe of the common treatment. Theſe evils might have been prevented by an early application of the ſpecific: but as in theſe caſes it will be impoſſible to determine how far the infection may have reached, or how much of it may have been abſorbed, the practitioner who ſhould here think of relying on a topical application alone, would only run the riſk of deceiving his patient, and hazard his own reputation. All therefore he has now to do, is, whilſt he pays an attention to the general habit of body, to endeavour by means of the circulation to apply the remedy to the poiſon in whatever part of the body it may exiſt, and this he will be able eaſily to do, if acquainted with ſuch a method of preparing Mercury as to make it miſcible with the fluids and enter the habit ſo as not to excite any ſenſible evacuation; if unacquainted with this, he will find it his beſt way to uſe the milder ſhop preparations, in very ſmall repeated doſes, mixed with ſuch ſubſtances as may determine their action to the ſkin, at the ſame time ſeconding this treatment with proper topical applications.

From what I have ſaid may be perceived how much weight is to be given to that objection againſt topical applications, that poxes are often brought on thereby. This may be the caſe where the remedy is unequal to the diſorder, or however well ſuited the former may be, the latter lies in part out of the reach of it. Thus where the diſeaſe has been of ſome ſtanding, and the matter by it's virulence has opened itſelf a paſſage, whereby nature may in part diſcharge itſelf from ſo noxious an inmate; if this is ſhut up, all that would have been carried off is now taken up into the habit; here the ill conſequences do not ariſe from the application, which as far as it is uſed is attended with the expected effect, but from the injudicious and partial uſe of it. Thus if any one in a body full of ill humours was to heal an ulcer not venereal, which diſcharged copiouſly, before he had mended the cachectic habit: what would be the conſequence? Unleſs nature had ſufficient ſtrength to drive the humours, which before paſſed off by that drain to the extremities and force a freſh outlet, they might fix on ſome of the viſcera neceſſary to life, and prove fatal. I agree there cannot be a more dangerous error than to ſuppoſe that when the venereal poiſon has made it's appearance in any particular ſpot at a period remote from the infection being received, that if by a topical application the virus may be deſtroyed in that part, a radical cure is effected. I am inclined to think it is often to this cauſe we may refer ſome of thoſe anomalous diſorders which are apt to make their appearance after forty, and which ſo often puzzle the phyſician, who is little apt to ſuſpect any thing venereal in men who have lived regularly towards the latter part of their lives: but in fact theſe may be ſhoots from the old root never thoroughly extirpated, though ſome of the branches may have been lopt, and which put forth in a different form, at a period when nature is leſs able to ſtruggle with the diſeaſe.

For it is not neceſſary that the common ſymptoms of external ſwellings, ulcers, *&c.* ſhould always accompany or diſtinguiſh this diſorder, which Proteus like, puts on a thouſand different forms. Yet the concluſion ſome writers are too apt to draw, that becauſe local affections are ſometimes ſymptomatic of a general infection, therefore a general infection muſt precede every local appearance, is ſo far from being a neceſſary conſequence, that it is not even a probable one; as is manifeſt from women locally infected during their pregnancy bringing ſound children into the world: which could never be accounted for, were the local appearance in every caſe the conſequence of the infection of the maſs.

As a local treatment can only take place in ſome particular caſes, and in all others it will be neceſſary to introduce a ſufficient quantity of Mercury into the ſyſtem to deſtroy the virus and remove it's effects: I ſhall now proceed to take a view of the various methods which at different times have been in uſe for that purpoſe.

Mercury may be adminiſtered ſo as to enter the ſyſtem externally as well as internally. The moſt general method of employing this externally is that which prevailed at firſt, and ſtill finds it's partiſans and defenders, *viz.* friction with Mercurial ointment, or with Mercury united by triture with hog's lard or ſuet. The preſent proportions are either equal parts of Mercury and Axungia, which form the Unguentum Ceruleum Fortius of the London Diſpenſatory, or two parts of the latter to one of the former, which make the mitius or milder. The beſt method of extinguiſhing the Mercury is to uſe no other ſubſtance but greaſe; but as this requires a conſiderable degree of labour and time, and can hardly be made but in cold weather; it is generally killed with turpentine, balſam of ſulphur, or ſome other matter. But it might be made with eaſe without any ſuch help, by uſing about a fifth part of the quantity intended to be made of old ointment, to which the Mercury is to be poured by little and little, as it is extinguiſhed by rubbing; when the remainder of the lard may be added, and the whole incorporated or intimately blended together. By the ointment made in this way the ſkin is leſs fretted, and inflammatory pimples leſs apt to be produced. The method of uſing this is to rub on a certain portion from time to time till a ſufficient quantity is imbibed to anſwer the intended purpoſe of removing the ſymptoms, and effecting a cure.

The common effect of Mercury being to flow to the ſalival glands, and occaſion a moſt copious diſcharge therefrom; this added to the notion of all diſeaſes requiring an evacuation, cauſed ſome of the greateſt men to conſider this as the critical one in this diſorder. This notion ſeemed confirmed by the filthineſs of the matter excreted, ſo that moſt practitioners ſeemed to look on this as indiſpenſible, founded their chief hopes thereon, and regulated themſelves thereby in the adminiſtration of the remedy. Without a full conviction of the neceſſity of ſalivation, we can ſcarce conceive how the phyſician could adviſe, or the patient ſubmit thereto. For as ſoon as it comes on, the party has his mouth all on fire, the glands appropriated to the ſecretion of the ſaliva, ſwell and ulcerate, as do the gums, tongue, *&c.* his teeth are all looſened, ſleep vaniſhes; or, if he chances to ſlumber, he muſt have ſomebody by him to awaken him every hour, for fear he ſhould be ſuffocated; and as it is impoſſible always to reſtrain the effects of the Mercury applied in this manner, all theſe accidents are ſometimes carried to the greateſt height: the tongue ſwells ſo as to hang out of the mouth, fringed with deep ulcers, the eyes are ready to ſtart out of the head, that and the face ſwell beyond meaſure, every ſymptom threatens the moſt imminent danger, ſo that all methods are immediately to be put in practice to divert the Mercury another way, and if theſe attempts ſucceed, ſtill the patient is exhauſted, and the work to be begun again. But ſuppoſing theſe accidents ſhould be leſs ſevere, (whoever has ſeen one in a ſalivation knows I have not exaggerated them) or only happen at the end of the treatment, and the patient ſhould be cured, he is mere ſkin and bone, hardly able to ſupport himſelf, perhaps is never reſtored to his original ſtate of health, but remains ſubject to violent pains of the head, obſtinate nervous affections, his conſtitution quite altered, or he may think himſelf happy if he eſcape with the loſs of his teeth : but what is worſt of all, the patient after having gone through this courſe, is far from being aſſured of his cure. The review of the ſoldiers or patients after ſalivation, in the military or other hoſpitals, is too ſtriking a proof of it.

To be fully convinced of the abſurdity of this courſe, we need only reflect on the object in view in the adminiſtration of

Mercury, *viz.* that it may be introduced into the fluids, and circulate therewith, ſo as to be carried into the remoteſt receſſes, to operate on the venereal poiſon lodged there, of which if the ſmalleſt particle eſcape the action of the remedy, by it's power of aſſimilation, it will ſoon re-produce all thoſe ſymptoms from the diſappearance of which the cure was preſumed: but in ſalivation the Mercury being almoſt immediately diſcharged by the mouth, is thereby prevented from being carried far enough into, and continuing long enough in the habit to effect this. This reaſoning as I have before hinted being confirmed by experience, which ſhewed that however abundant this evacuation might be, the diſorder often was not cured, that the ſooner and more eaſily it was brought on, the greater probability there was of a failure, that in more tender conſtitutions, and thoſe ſo far broke down by the violence of the diſorder as to render this rough method too dangerous, an equal, if not ſuperior advantage was procured without it; mankind began to get the better of this prejudice: but the opinion ſtill prevailing that Mercury operated by the number and weight of it's globules, conſequently ſo much of it was to be introduced as might break through, and diſſolve the inſpiſſated lymph, and at the ſame time deſtroy the venereal poiſon blended therewith, it was thought to be more innoxious in the form of ointment, and liable to be attended with fewer inconveniences to introduce it by friction than by the ſtomach, the digeſtive tone of which might be hindered by it's weight, if given in ſufficient quantities to anſwer their ends.

This gave riſe to the method by extinction, ſo called becauſe the ſalivation was extinguiſhed, or kept down, by frequent purgatives, which ſome uſed to give after every friction, whereby the humours, and the Mercury were diverted to the inteſtinal canal; or elſe from the Mercury operating as extinguiſhing the diſeaſe without producing any ſenſible evacuation. This laſt is by many called, the Montpellier method, from being ſupported by Chicoyneau, Chancellor of that Univerſity, in a public diſſertation, in 1718, and afterwards by Haguenot, and ſince that time generally taught and practiſed there, and throughout France, and more or leſs adopted by all Europe; not but that it was known and practiſed by many long before that period. There may be ſome variation in the different mode of preparing, and treating the patient during his courſe, according to the uſage of different places, or the ſentiments of practitioners; but the ſubſtantial part of the treatment conſiſts in rubbing in a quantity of Mercury, ſo as not to excite a ſalivation, or any ſenſible evacuation.

As this mode, as I have juſt mentioned, greatly prevails in France, and is conducted there in all it's forms, I ſhall content myſelf with giving their method, as from thence a notion may be formed of this treatment in general. Warm bathing being much more in uſe there than with us, the patient having been bled and purged the day before, is put into a warm bath, where he continues from half an hour to an hour or two, or longer, according to his ſtrength and habit. This is repeated generally twice a day, for a longer or ſhorter time. The number of baths in each caſe being ſeldom leſs than twenty, often forty or fifty, ſometimes more, the rule being, that when the patient begins to ſweat on the leaſt motion, he is thought ſufficiently prepared; he is then bled and purged a ſecond time, and the day following they begin by rubbing in a ſmall quantity of Mercurial ointment on the ancles, thence go daily on to the legs, thighs, loins, ſhoulders, and arms, avoiding the anterior part of the body, *viz.* the belly and breaſt; augmenting the quantity of ointment as they go on to a certain degree, and carefully watching the mouth: on the leaſt appearance of the gums ſwelling, or any inflammation in any part, they put off the next friction for a day or two, or longer, till ſuch ſigns diſappear. The parts on which the ointment is rubbed are always kept wrapt up in the ſame cloths, (unleſs removed on the mouth being affected) and from four to eight or ten ounces of ointment commonly made with two parts of Axungia rubbed on in each caſe according to the inveteracy of the diſorder, and the urgency of the ſymptoms. In thoſe who are of a very dry habit, or have the genus nervoſum extraordinarily irritable, the uſe of warm baths is continued during the frictions, and the whole is terminated with bleeding and purging a third time. The ſtricter practitioners generally confine the patient to his room, keep him to a milk diet, or the lighteſt and mildeſt food, ſuch as broths and white meats, and forbid the uſe of wine, or only allow enough to tinge the water. The intention in ſo often bathing, is to prepare the inſpiſſated matter for reſolution, to render the fibres and veſſels ſupple that the Mercury may meet with leſs reſiſtance, and have freer acceſs to the venereal matter; and to open the pores of the ſkin, that it may more eaſily take that courſe, than run to the mouth. This is by many looked upon as the only radical cure in inveterate caſes, but is ſtrongly oppoſed by others, and with great reaſon. The quantity of Mercury uſed in this way is vaſtly ſuperior to what is neceſſary to be given inwardly. It is very uncertain how much of the Mercury in the ointment is rendered active, or ſo far altered as to be reducible into activity in the body, and it is probably on that part only that is thoroughly extinguiſhed or has loſt it's globular form, that it's antivenereal virtue depends; this may be more or leſs according to the degree of trituration uſed in making the ointment; the reſt probably only rolls in the veſſels without any ſalutary effect, and by uniting in maſſes in the body, may occaſion great agitation, and have dangerous effects on the coats of the veſſels or the nervous ſyſtem, or may chance to lodge in the articulations. Theſe evils are not imaginary. Antonius Muſa Braſſavolus, tells us that he found Quickſilver in the heads of thoſe who died after Mercurial frictions; that another who had been only three times rubbed on the legs and arms, vomited Quickſilver. Bonetus found Quickſilver in a conſiderable quantity in the ventricles of the brain of a common woman who died ſuddenly. Fallopius tells us that on laying open a bone in a venereal gumma, he found ſome Quickſilver there, though it was three years ſince the man had been anointed. Authors are full of inſtances of this kind, and daily experience ſhews us that varicoſe affections, tremblings, pains, and lameneſs, are often brought on by Mercurial frictions. How apt the Mercurial globules are to re-unite into maſſes, when freed from the medium which kept the particles aſunder, is evident, from a great part of the Mercury falling into a maſs on melting the ointment; from the number of larger globules formed from the re-union of the ſmaller, to be plainly ſeen as the greaſe is diſperſed during the courſe of the friction, or abſorbed by the cloths with which the parts are covered. Another ground of uncertainty ariſes from the quantity of Mercury rendered volatile, and exhaling in the chamber, during the friction, *&c.* often ſufficient, not only to whiten or turn the metals, but alſo to affect the aſſiſtants. We have inſtances of ſalivation following from only being ſome time in a room where a quantity of Mercurial ointment had been rubbed on. Nor is it from the nature of the preparation only, that this uncertainty ariſes; it depends alſo greatly on the nature of the patient's habit. Some people have their ſkins of ſo looſe a texture, and their pores ſo open, as readily to abſorb whatever is offered; others ſo denſe and cloſe as hardly to take in any thing, ſo that it is far from being extraordinary that ſuch ſudden and violent effects ſhould be ſometimes produced, as exceſſive ſalivation, exhauſting diarrhœas, *&c.* accidents neither to be foreſeen or prevented, and ſometimes with difficulty to be remedied by the utmoſt efforts of art; eſpecially as the very nature of the preparation rather promotes them; the immediate effect of unction with greaſy ſubſtances being the obſtruction of perſpiration,

tion, and the repercuſſion of the perſpirable matter ; to which if we add the violent agitation of the humours excited by the remedy, we cannot wonder that they ſhould often take a rapid courſe ſome way, and happy it is when in ſuch a direction that they may be carried off. It is from this latter cauſe, *viz.* the obſtruction of perſpiration, ariſe thoſe troubleſome cutaneous affections ſo common in this treatment, and which by no means are to be conſidered as critical eruptions.

Theſe objections go immediately to Mercurial frictions as ſuch. There are others which have more or leſs force againſt other Mercurial preparations, but militate moſt ſtrongly againſt frictions. They are known to be moſt dangerous in all pthyſical and hæmoptical caſes, they always encreaſe and often occaſion hectic fevers, they are generally prejudicial in hydropical caſes, and no one hardly dares uſe them to pregnant women and children. I ſhall ſay nothing of the irkſomeneſs and publicity of this method, as theſe by many might be diſpenſed with, were the infallibility of the cure and the ſuperior advantages to be derived from thence ſufficient to counterballance theſe inconveniences: but this is ſo far from being the caſe, that experience daily ſhews us the cure is far from infallible; and the relaxed broke down ſtate of the patient when cured, is ſometimes hardly to be repaired by air, milk, bark, ſteel, and the beſt reſtoratives and tonics hitherto known.

Experience having convinced mankind that the action of Mercury depended on it's diviſion, it was conceived that if it were reduced into vapours by means of combuſtion, and received in that ſtate into the body it's full effect might be obtained. This brought on the method of fumigation, in which Mercury combined with ſulphur as in cinnabar, or united with other drugs was thrown on live coals in the quantity of half a drachm or more, and the naked body expoſed to the fume, taking care to guard the head and prevent it being inſpired. This generally laſted for ſome minutes, after which the patient was put into a warm bed for an hour or two to ſweat, which by this means was generally excited very copiouſly. Though Mercury in this way was commonly of no great efficacy where the diſorder was deeply ſeated, yet where the ſymptoms were ſuperficial it generally removed them in a very ſhort time, ſeeming to act with great activity, but if they ſoon diſappeared they were apt to re-appear, and prove that the cure was often only apparent, yet not without a conſiderable degree of danger. The cholics, violent pains in the head, and paralytic ſymptoms generally experienced by thoſe expoſed in the way of their trade to Mercurial vapours, would of courſe equally affect the patient; beſides as there was no managing the Mercury in this way, inſtead of a diaphoreſis, it often occaſioned obſtinate diarrhœas, or a ſtrong ſalivation. So that Mercurial fumigations are now ſeldom uſed but in obſtinate local complaints, where the ſmoke is directed by means of a tube or inverted funnel on indurated tumors, fiſtulous ulcers, *&c.* after the ſafer applications have proved ineffectual. Thoſe who have a mind to ſee the very extraordinary effects of a ſingle fumigation with 30 grains of Cinnabar, may conſult Volume IV. of Medical Eſſays and Obſervations, Page 41.

As the deſign of giving the utmoſt degree of activity to Mercury produced fumigations, the hopes of introducing it ſlowly and gradually, gave riſe very early to Mercurial plaiſters. With theſe ſpread with Mercury united with reſinous or other ſubſtances the body was covered. But beſides the diſagreeable reſtraint in which the limbs, *&c.* were kept by this means, the effects were ſlow and uncertain; and as they almoſt totally obſtructed perſpiration, they of courſe occaſioned inflammatory cutaneous eruptions; ſo that they are now confined to venereal tumors, *&c.* to determine the action of the Mercury immediately on the part.

There remains another way of applying Mercury externally, which though formerly made uſe of was of ſhort duration, but has been attempted to be revived at Paris, ſince the celebrated Van Swieten's recommendation of Corroſive Sublimate, *viz.* Mercurial baths prepared in a proportion not exceeding 8 grains of Corroſive Sublimate, or any ſaline combination of Mercury with exceſs of acid, to a quart of water; in this warm, the patient was bathed for a certain time; but as this method ſoon ſunk into diſcredit on it's firſt introduction, it met with little encouragement on it's revival.

Upon the whole, with regard to the external uſe of Mercury as intended to be thrown into the ſyſtem, we may conclude in the words of Alexander Trajanus Petronius, "Such is it's uncertainty that you "can never adminiſter it with preciſion: if,

“ from an apprehenſion of danger, you are “ too cautious and timid, it has no effect; “ if you venture to uſe it more freely in “ hopes of curing, you often do miſchief: “ ſo difficult is it to determine it's efficacy, “ or know how far we may be right “ or wrong in it's adminiſtration*.”

Theſe conſiderations induced many practitioners to turn their thoughts on the propereſt method of giving Mercury inwardly; eſpecially as they found that even ſalivation, which was looked upon as the teſt of the quantity of active Mercury introduced into the habit, could be raiſed with much ſmaller quantities, and be more eaſily governed in this way. With this view, Mercury having been found to have little or no effect when given in a maſs, they divided it by triturating with honey or ſaccharine ſubſtances, with balſams, with reſins, with gums, purgatives, abſorbents, ſulphur, ſalt, *&c.* and gave to the ſeveral preparations ſuch names as the ſubſtances with which the Mercury was united, or the intentions they had in view ſuggeſted; hence the Mercurius Saccharatus, Alcalizatus, Diaphoreticus, Antiſcorbuticus, *&c.* That Mercury treated in this manner has a conſiderable ſhare of activity is evident, from it's exciting ſalivation, *&c.* when given in no very conſiderable quantity: and prepared with care, and adminiſtered with judgment, it has been and may be productive of very good effects. By this means the Mercury may be made to concur with and promote the operation of thoſe remedies with which it is united, and when ſeveral active qualities convene in a body, very happy effects often ariſe from the joint exertion and concurrence of ſuch powers: but the effect of theſe kinds of preparations, as Mercurial, are apt to be uncertain, their activity depending on the fitneſs of the parts of the ſubſtances with which Mercury is triturated, to adhere to and keep it's parts divided, and the degree of trituration uſed, in which we cannot have a certain teſt, as in the black powder produced from triturating Mercury by itſelf; and yet it is probable that in theſe preparations, as well as in the Mercurial ointment, their greateſt activity ariſes from ſuch Mercurial particles as have loſt their globular form; and we find by experience that Mercury treated in this manner, is ſeldom ſufficiently active in old confirmed venereal caſes; unleſs, perhaps, given in ſuch quantity, as might injure the organs of digeſtion, or cauſe it to run off by ſalivation which theſe preparations are apt to do.

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* Tanta eſt ejus inconſtantia ut nunquam omninò exactè adminiſtrari poſſit; quùm enim nimio ejus uſu nocere times parum proficis; cum eo quod ſatis eſt juvare cupis ſæpenumero valdè lædis: adeò difficile eſt ejus vires metiri et rectum ab eo quod non eſt rectum in illo diſcernere.

Alex. Traj. Petronius, de Morbo Gallico, lib. 6, cap. ix.

Mr. Plenk of Vienna, in a little Latin eſſay publiſhed ſome years ago, has attempted to prove that Mercury has an elective affinity, or ſtronger diſpoſition to unite with the mucilage of gum arabic, than with moſt vegetable ſubſtances; but I think his experiments are far from proving his poſition. That Mercury may by this means admit of a certain degree of diviſion, and be ſuſpended for a time, I grant; nay, that part of it may really looſe it's globular form: but as to the greateſt part, the union is very imperfect, there needs not the intervention of a third body to ſeparate it, it ſubſides of itſelf in the form of a grey powder, in which the Mercurial globules are plainly viſible by a glaſs, and many to the naked eye; and the ſuſpenſion, whilſt it ſubſiſts, ſeems to be owing to the tenacity of the fluid cauſed by the gum: ſo that in fact it amounts only to Mercury divided, by any bland ſubſtance, and the effects of it are perfectly ſimilar; it's operation is ſlow, it is only effectual in recent caſes, or where the virus is of the milder kind, and ſeldom reaches the diſorder where it is deeply fixed in the ſolids. Yet I think the matter with which the Mercury is here united a very proper one, and might be more uſed than it is with many other Mercurial preparations; as it helps to defend the parts from the too immediate action of the remedy and occaſions it's more gradual ſolution. Of all the ſubſtances that can be united by triture with Mercury, there is none with which it's union is more intimate than with ſulphur: blended together, the maſs is reduced to a black powder, called Æthiops Mineral. This is often made by melting the ſulphur, and ſtirring in the Quickſilver, by which means the union may be ſomewhat ſtronger. But though in this preparation Mercury is mixed with a larger proportion of ſulphur, one third or more of it's weight, it is only capable of being combined in the moſt intimate manner with about one ſeventh; for if Æthiops Mineral be expoſed to an heat ſufficient to ſublime it, great part of the ſulphur will be ſeparated, and the compound ſublimed be of a dingy red; and if the Cinnabar, the reſult of this operation, be again ſublimed, the Mercury will ſtill riſe of a brighter colour, leaving the ſuperfluous ſulphur exceeding about one ſeventh of it's own weight, which it will always carry up with it however often ſublimed, inſeparable but by combuſtion, on the intermedium of ſome matter with which the ſulphur has a ſtronger affinity than with Mercury.

The effects reſulting from the incorporation of Mercury with ſulphur, are quite different from thoſe of it's union with other ſubſtances: theſe, by dividing it, render it more active, but by it's union with ſulphur it is rendered more inert; the reaſon of which is, that the union is ſo intimate as not to be diſſoluble by the powers of the ſtomach, which has little action on this compound, in which the Mercurial particles are enveloped, and ſheathed by the remoſe parts of the ſulphur, which is in return defended by the Mercury. Hence given in ever ſo large a doſe, it generally, at leaſt as to the greateſt part, only paſſes the inteſtinal tube, and is found unaltered among the fæces; ſo that many have rejected theſe combinations from practice, as having no more activity than ponderous, inſipid earths, and never entering the lacteals: though many writers are liberal in their praiſe. I think in deſerting them entirely, we run into an oppoſite extreme; they certainly may have ſome action as compounds. From Æthiops Mineral triturated extremely fine, given in ſmall doſes often repeated, and with the food, I have often known good effects produced in obſtructions of the meſenteric glands, and diſorders cauſed by too great viſcidity of the lymph: but whoever depends upon theſe as Mercurial, or founds his hopes thereon in venereal diſorders, as I have known many do, particularly in gonorrhœas on Æthiops Mineral, I am afraid will find himſelf greatly diſappointed. Yet I have known one caſe, where Æthiops Mineral made without fire, in no very large doſe, affected the mouth: but, I impute this to the negligent manner of it's being made, and the imperfect union of the Mercury with the ſulphur, rather than to any idioſyncracy of the party, although eaſily affected by Mercurials.

The ſolution of Mercury in mineral acids, or it's corroſion into a ſaline ſubſtance, is neither liable to the objection of uncertainty or inertneſs, but at the ſame time is more exceptionable, from the too great activity and corroſiveneſs it acquires by this means.

Mineral acids exerciſe a ſtrong action on Mercury. Of theſe ſome unite with more or leſs eaſe, and form a ſtronger or leſs intimate union than others. The nitrous acid, or as it is commonly called, Aqua Fortis, will diſſolve Mercury in the largeſt quantity, and even without heat; though this is commonly uſed to promote it's action. This acid, if very ſtrong, will diſſolve four fifths, or nearly it's own weight, of Mercury; but it's union therewith is leſs intimate than that of the vitriolic or marine acids: for, on pouring on to a ſolution of Mercury in the nitrous acid, a quantity of the vitriolic or marine, or a ſolution of any neutral ſalt, containing theſe acids, either of them will diſlodge the nitrous, and uniting itſelf to the Mercury in it's divided ſtate, cauſe it to be precipitated; forming therewith a Turbith Mineral, or the white Precipitate of the Edinburgh Diſpenſatory.

The vitriolic acid has little or no action on Mercury, unleſs it be in the above divided ſtate, or unleſs the acid be in the higheſt ſtate of concentration, and aſſiſted by a very ſtrong heat. For this purpoſe Mercury is expoſed in about double the weight of the vitriolic acid to a ſand heat; when brought to boil, the acid is concentrated more and more, and as the denſity of the liquor is increaſed, and becomes capable of retaining a greater heat, it then acts on the Mercury, and reduces it to a white calx. The ſolution in the nitrous is commonlyeffected in the ſame way; and both theſe give to the calces or ſaline maſſes, the reſult of theſe operations, a degree of fixedneſs, ſo that they are not ſo eaſily elevated as Mercury in it's crude ſtate; whereas the combination with the marine acid is much more volatile or eaſily ſublimed. This combination of Mercury with the marine acid, can only be brought about when both theſe ſubſtances are in their moſt divided ſtate. There are ſeveral proceſſes given for this purpoſe, which may be ſeen in ſeveral Diſpenſatories: the whole of the matter conſiſts in adding ſuch ſubſtances, as have a ſtronger affinity with the baſis of ſea ſalt, than that has with it's acid, whereby this being let looſe is raiſed by the fire in vapours, and meeting the Mercury in the ſame ſtate, they are moſt intimately combined together; the baſis of the ſea ſalt remaining in the retort, united with the ſubſtance that diſengaged it.

The combination of Mercury with the marine acid, is much more intimate than with either the vitriolic or nitrous; as in theſe a ſtrong degree of fire, or even water, will carry off a great part off the acid; whereas to however ſtrong a fire the muriatic combination be expoſed, it will always ſublime whole and entire, nor will any ablution ſeparate theſe two ſubſtances: but when diſſolved, the minuteſt particle in the menſtruum, will be a particle of Mercury united to a particle of the acid, a real metallic ſalt, not to be decompoſed, but by the intervention of a third body, with which the acid has a greater affinity than with Mercury.

The addition of weight Mercury acquires by this proceſs of uniting therewith, as much of the marine acid, as can be intimately combined, is two ſevenths of it's weight; for according to Tachenius's account of the great works in Holland, (from whence and Venice the reſt of Europe is chiefly furniſhed with this commodity) two hundred and eighty pounds of Quickſilver produce three hundred and ſixty of Sublimate. The ſpecific gravity of Sublimate is to that of Quickſilver as eight to fourteen. It's ſolubility in water is not very great, it requiring nineteen or twenty times it's weight to diſſolve it.

All theſe ſolutions in mineral acids are corroſive to the higheſt degree, ſo as to merit the name of poiſons, if ſuch appellations are allowed to be juſtly given to any ſubſtances. The ſolution in the vitriolic, is never uſed in it's original ſtate; yet it is ſaid to be the remedy of Knoffel, which he called his Antipodagricum et Diaphoreticum Secretum. But I ſhould be much afraid that, by attempting to remove one diſorder by ſuch dangerous exhibitions, there would be more than a probability of bringing on another more fatal. The white maſs of this ſolution edulcorated by frequent ablutions in hot water, as the exceſs of acid is carried of thereby, becomes of a bright yellow, and furniſhes us with Turbith Mineral, or the Mercurius Emticus Flavus of the London Diſpenſatory, being the moſt certain emetic of the Mercurial preparations, to be uſed with any degree of ſafety, and when thoroughly waſhed, contains very little, if any acid; but the water in which it has been waſhed, beſides the acid carried off, contains a portion of the Mercury, ſo ſtrongly united therewith as to be diſſolved therein;

which may be precipitated therefrom by the affuſion of any fixed or volatile alcali. Turbith Mineral is alſo extremely apt to ſalivate, ſo that it is no uncommon practice with many who raiſe a ſalivation by internal remedies, in caſe it does not come on ſo readily as expected, from Calomel and the milder preparations, to give a few grains of Turbith Mineral, which ſeldom fails of producing a ſpeedy effect, tho' ſometimes more violent than wiſhed. This preparation is ſtrongly recommended by many in virulent gonorrhoeas. The great Sydenham uſed to give two or three doſes to the amount of eight grains, at proper intervals, where there was a violent afflux of humours to the parts. But I ſhould ſcarce think this ſafe, except in robuſt conſtitutions; and the only intention to be anſwered in this manner, would be cauſing a revulſion, and unleſs the corrupted humours ſhould be at the ſame time carried off, or the venereal poiſon deſtroyed, the conſequences might be dangerous. This prepation may be uſed with good effect as an alterative, given in ſmall quantities of a grain or leſs, mixed with Pill. de Duobus and Camphire, as recommended in the fourth volume of the Edinburgh Med. Eſſays, pa. 32; but the ſame effect may be procured from Mercurius Calcinatus, or any of the milder preparations of Mercury, given in the ſame manner. As to giving it as an emetic, Ipecacuanha anſwers the ſame purpoſe with much leſs danger: but where it may be thought adviſeable to uſe Turbith Mineral it is the ſafeſt way to divide the doſe; and, if what is firſt given, does not produce the deſired effect, in a limited time, to give the remainder. For the operation of Mercurial remedies, particularly of the more acrid kind, and this, among the reſt, is ſubject to great uncertainty, as depending on the degree of ſolubility in the ſtomach.

The ſolution of Mercury in the nitrous acid is ſtill more corroſive than that in the vitriolic, ſo as ſcarcely to be touched with ſafety; it immediately changing the ſkin to a deep purple colour or black. If, after the evaporation of the Aqua Fortis, the white calx remaining, be further urged with the fire, as the acid exhales in red fumes, it changes from white to yellow, thence to orange, and through a ſucceſſion of ſhades to a bright red, which is the Mercurius Corroſivus ruber of the London Diſpenſatory, commonly called, however improperly, red Precipitate; and, if the fire be puſhed with great violence, it will at length ſublime.

The red Corroſive is a violent eſcarotic. It is ſeldom uſed but for external uſe, yet we have inſtances of its good effects in very deſperate deep ſeated poxes, which have reſiſted other remedies. We are informed by Dr. Storck of Vienna, that by giving it in the quantity of two grains, in two quarts of a ſtrong decoction of Bardana root, he has cured venereal diſorders after other courſes had failed. This, edulcorated by frequent ablution in hot water alone, or with the addition of a certain quantity of alcaline ſalt, and by digeſting in, and burning thereon ſpirits of wine, furniſhes the Arcanum Corallinum, pulvis Principis, and the brown Precipitate of Wurtz; but all theſe preparations from the nitrous acid are exceedingly acrid, and apt to injure the ſtomach. What then are we to think of the original ſolution? and yet, there is hardly any Mercurial preparation that has been more freely uſed by quacks. This ſolution diluted was l'eau Mercurielle, or the Mercurial water, long diſtributed at Paris by a Capuchin friar; this, with the addition of ſome ſal ammoniac, formed Ward's White Drops, and has lately by a regular at Paris, been attempted to be dulcified with rectified ſpirit of wine, then mixed with ſome ſyrup, and ſold under the name of *Syrop Mercuriel.* Lemery tells us, that in his time it was adminiſtered internally, diluted with a large quantity of water, even by ſome regulars; but his commentator, M. Baron, juſtly exclaims againſt this practice, as pregnant with the greateſt evils. "Unleſs ſays he, a perſon means to "load himſelf with the guilt of poiſoning, "he muſt carefully avoid ever ordering

" this Mercurial water internally: it is
" only fit to corrode the ſtomach, and de-
" ſtroy the nerves thereof; and as the
" reſt of the nerves communicate with the
" ſtomachic plexus, throw the whole ſyſtem
" into a ſpaſmodic ſtate, and bring on ſuch
" a train of dreadfully painful accidents,
" as death only is capable of putting an
" end to*."

The combination of Mercury with the greateſt quantity of marine acid, which can be intimately united therewith, is moſt violent corroſive, ſo as to be called, by way of eminence, corroſive Mercury Sublimate, or the white Mercurial Corroſive. It is neceſſary to dilute it with a large quantity of water for external uſe, as it corrodes and deſtroys all the parts of the body it touches. Taken internally to the amount of but a very few grains, it occaſions exceſſive heat and thirſt, violent vomiting of frothy ſlimy, bloody matter, dreadful gripings, bloody ſtools, convulſions, cold ſweats, fainting, and death. The appearance, on opening thoſe poiſoned therewith, are violent inflammation, livid gangrenous ſpots, and ulcerations in the ſtomach and bowels, extravaſated blood in different parts, particularly between the fibrous and nervous coats of the ſtomach and inteſtines. The dread of all theſe evils has ever deterred the more timid practitioners from venturing on it internally: yet, it has been mentioned by ſeveral writers, from the time of Baſil Valentine to our days, as of uſe in the cure of venereal and other diſorders, obſtinate againſt ordinary remedies. Yet there were never wanting others, who warmly exclaimed againſt this practice as productive of the moſt dreadful ills; among others, Cartheuſer, in his Pharmacologia, cautions practitioners againſt it, as they value their peace of conſcience and reputation, and tells us, what I am afraid has been too much confirmed by modern obſervation ſince it's late introduction; that it's deleterious effects are not always ſenſible on it's firſt being taken, but are felt a conſiderable time after*.

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* Quiconque ne veut ſe rendre coupable d'empoiſonner, doit bien ſe garder de faire prendre l'eau Mercurielle intérieurement. Cette liqueur n'eſt propre qu'à corroder l'eſtomac, à détruire le tiſſu des fibres nerveuſes de cette viſcere, & à faire prendre à tout le genre nerveux, par la communication qu'il a avec le plexus ſtomachique, un état ſpaſmodique, d'ont l'impreſſion a bien de la peine à s'effacer; & qui entraîne après lui une longue ſuite de douleurs que la mort ſeule eſt capable de terminer ſans retour.

Edit. de LEMERY, par M. BARON, p. 238.

An attempt was made to introduce it into France, towards the cloſe of the laſt century, where it was known by the name of the Remede du Cavalier, from being diſtributed in the French army at the ſiege of Namur. We are informed by Turner, that it was likewiſe uſed in England, in his time. He gives us two preſcriptions, one from Wiſeman.

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* Sunt quidem qui illum in multâ aquâ ſolutum, aut ſyropo quodam mitigatum, in variis morbis rebellibus, ut ad ſalivationem in Lue venereâ excitandum commendant. Verum unumquemque hortor medicum, ut ab uſû hujus concreti corroſivi interno ſemper abſtineant, ſi aliàs conſcientiam ſalvam & famam illibatam ſervare velit. Noxæ enim quas productum hoc internè uſurpatum infert, non ſemper poſt primam ſtatim abſumptionem, ſed perſæpè poſt notabile demum tempus ſentiuntur.

CARTHEUSER, Pharmacolog. pag. 447.

℞ Mercur. Sublimat. Corroſ. ʒj Alcohol. vin. ℥j F. ſolutio.

℞ Mercur. Sublimat. Cinnamom. Gallang. Curcum. ana ʒij Croc. ʒj Aqu. Fumar vel Fontan ℔ij infund. in balneo. per xxiv Horas dein colentur pro uſu.

Of the firſt they uſed to give from x to xxx drops in whey or gruel, increaſing by degrees; of the latter two or three ſpoonfuls. The former he tried himſelf, but very ſoon dropt it. And whenever this method was attempted, whether from it's inefficacy or danger, it ſoon fell into diſcredit. It has been within theſe few years revived, by the late celebrated Baron Van Swieten, from the following hint of his maſter, the great Boerhaave, who ſpeaking hereof ſays, " The taſte of this dreadful

" metalic

" metallic ſalt is very auſtere. One grain
" diluted with an ounce of water furniſhes
" a good coſmetic, if uſed with diſcretion,
" as by only waſhing therewith, it certainly
" deſtroys thoſe inſects that harbour in
" the ſkin. If a drachm of this mixture
" be ſweetened with ſyrup of violets, and
" taken two or three times a day, it will
" produce wonderful effects in many diſorders
" deemed incurable; but the greateſt
" ſkill and caution is here required in the
" phyſician. You muſt not think of uſing
" it, unleſs perfectly acquainted with the
" method *."

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* Sapor hujus vitrioli terribilis, auſterus. Granum unum, aquæ unciâ dilutum, remedium dat coſmeticum prudenter uſurpantibus, venenum omnium inſectorum cutaneorum ſimplici loturâ. Si drachma talis mixturæ ſyrupo violaceo mitificatæ potatur bis terve in die, mira præſtat in multis morbis incurabilibus. At prudenter à prudente medico. Abſtine ſi methodum neſcis.

BOERHAV. Chem. T. ii. Proceſs. 155.

Encouraged by this authority, he proceeded with all that prudence and tenderneſs, which diſtinguiſh the man of knowledge and feeling, from the raſh and ignorant pretender; beginning with a minute quantity, *viz.* one twentieth of a grain copiouſly diluted with water, cautiouſly augmenting the doſe as he found it's good effects; conſtantly attending to it's operation, to guard againſt the leaſt appearance of evil. But he found by adminiſtering it in this way, he could hardly ever arrive at giving half a grain a day, however diluted, without the patient's complaining of heat, nauſea, irritation, *&c.* Whilſt he was beſtowing his whole attention on the means of avoiding theſe inconveniencies, he was informed by his friend Ribeira Sanches, phyſician to the Empreſs of Ruſſia, that an old ſurgeon made a practice of giving, in the moſt deſperate venereal caſes, an ounce of the following, morning and night, increaſing or diminiſhing the doſe as he ſaw occaſion.

℞ Mercur. Sublimat. Coroſ. ʒj Spirit. fermentati ex hordeo vel ſecale parati, ſemel rectificati, uncias centum & viginti.

By which means he cured theſe diſorders with certainty, and without any ill conſequences, unleſs occaſioning ſalivation according to circumſtances.

He tells us, that from thenceforth he adopted this method of giving it: but as his intention was to avoid ſalivation, his common doſe was little more than half that quantity, *viz.* one half or five eighths of a grain, by which the cure was no leſs certain, and effected without the leaſt inconvenience, though ſomewhat longer time was neceſſary to compleat it.

To judge from the favourable accounts of this remedy, publiſhed by this great man, of whoſe probity no one doubts, as well when given by himſelf, as in the hoſpital at Vienna, by Maximilian Locher, under his inſpection, we ſhould be tempted to look on this as the great deſideratum in the venereal diſeaſe; and inſtead of ſpending our time in farther reſearches after an eaſy and ſure preparation, apply ourſelves to fix the beſt and ſafeſt method of giving this: but unfortunately, whether from the German and more Northern conſtitutions, being leſs irritable than thoſe of the South, and more able to bear this violent remedy in larger quantities, or ſome difference in the menſtruum there uſed, the effects in the more Southern climates, and here in England, were far from coming up to what the accounts publiſhed at Vienna gave us reaſon to hope. Given here in ſmaller doſes, it cauſed great heat in the ſtomach and fauces, occaſioned gripings, violently affected the nervous ſyſtem, ſo as to bring on anxieties, faintings, *&c.* ſymptoms which called for immediate relief; and, whether from this inability to bear it in ſufficient quantity, or whatever other cauſe, the cure was often only apparent. Were the diſappearance of the ſymptoms a certain teſt of the cure, there is hardly any one remedy the effects of which are ſpeedier or more flattering, particularly in cutaneous affections: but though the firſt effects ſeemed to promiſe ſo well, the progreſs did not anſwer the beginning; many of thoſe ſymptoms which refuſed to yield at firſt, were generally proof againſt a continuation of the remedy, unleſs the quantity was increaſed, which was hardly to be borne; (unleſs perhaps by ſoldiers, whoſe way of life had hardened them) and this ſeems to be the reaſon why the accounts in our Medical Eſſays, by the army ſurgeons, rather concur with thoſe from Germany: and from the ſame reaſons many of thoſe ſymptoms which had diſappeared at firſt, oftentimes re-appeared on diſcontinuing the remedy. I own I have never given this remedy myſelf, but have had frequent opportunities of ſeeing thoſe under this courſe, and made it a point to enquire amongſt the moſt candid, and judicious practitioners of my acquaintance, the reſult of which was, that thoſe who could bear the remedy in ſufficient quantity, and continue it for a time were cured; that, in others who were irregular, or where the diſorder was deeply rooted it was doubtful; but that they could never depend thereon in weak and delicate conſtitutions, the diſorders it ocaſioned being ſuch as flatly to prohibit it's continuance.

As the authors of the German accounts are too reſpectable to have their veracity called in queſtion, and yet experience has convinced us, that the effects of the medicine here are ſo widely different; I have ſometimes thought this might ariſe from the difference of our malt ſpirit, from that uſed by them. It is well known that expreſſed oils are great correctives of mineral poiſons, and the groſſer and coarſer any eſſential oil is, the more it will approach thereto in it's effects, and be fitter to inviſcate and ſheath the compound, or act as a kind of ſulphur, and prevent it's too immediate diſſolution in the ſtomach. In malt ſpirits this oil will have an advantage as conſtituting part of the menſtruum, which ſerves as the diſſolvent. The celebrated Dr. Cullen tell us, in his lectures, that, he thinks, he has ſeen Corroſive Sublimate rendered inert by ardent ſpirits abſtracting the acid; I can't help thinking this effect rather imputable to what I have juſt ſuggeſted, than to an abſtraction of the acid, ſince ardent ſpirits are far from acting readily on ſpirit of ſalt, even in it's uncombined ſtate, as appears from the difficulty with which it is dulcified thereby.

It is well known that the malt ſpirit in Germany, and the more Northern parts is of the coarſeſt kind, chiefly drawn from rye, and the moſt abounding with the eſſential oil of the grain, whence that ſtrong twang which renders it ſo intolerably nauſeous to thoſe not accuſtomed to it: and the manner in which they rectify it is ſo ſlovenly, that almoſt all this oil riſes in the rectification. Now the preſcription is expreſs to diſſolve it in malt ſpirit once rectified; and though Van Swieten tells us, that ſome uſed ſpirit of wine, and as far as he knew with the ſame effect, yet all the inſtances he give us within his own knowledge, are from the diſſolution as above. The French and more Southern people have no malt ſpirit, ſo that finding their brandies not anſwer, they generally uſe a ſolution in water, with the addition of ſome ſal ammoniac, to increaſe it's ſolutive power: and here in England our diſtillers, whoſe aim it is to have a clean ſpirit, i. e. as homogeneous, and as free from this oil as poſſible, uſe all their art to break it down, or keep it back as much as they can in the rectification, to deſtroy the nauſeous taſte; and for this purpoſe moſt of them uſe additions to lay hold of it, and prevent it's riſing. Certain it is, Van Swieten found a conſiderable difference in the effects of Corroſive Sublimate when given in water, and when diſſolved in malt ſpirit; as, in the former caſe, he could never go beyond half a grain, ſometimes not come up to that; whereas he was able to give it in double the doſe, in the latter, without the leaſt complaint on the part of the patients: and he tells us, that when the doſe was increaſed, it was found beſt to increaſe the quantity of the menſtruum, as thereby there was leſs danger of vomiting, *&c.* than when he increaſed the proportion of the Sublimate in the original quantity of ſpirit. And poſſibly it may be owing to a coarſer kind of ſpirit being uſed in the army, that many of the Engliſh ſoldiers, were able to bear this remedy in larger quantity than the reſt of their more delicate countrymen. However, if after what I have ſaid, there are ſtill perſons deſirous of giving this violent remedy further trials, I would adviſe them to ſacrifice their delicacy in this particular, and give it in the coarſeſt malt ſpirit.

But though this remedy is too corroſive in it's original ſtate, it is the baſis of the moſt univerſally approved of the preſent preparations: for as the evils complained of ariſe from it's too great ſtimulus, whether from the exceſs of acid, or it's too great and ſudden ſolubility; all that is required is to diminiſh the proportion of the acid to the Mercury, by depriving the compound of part thereof; or by combining a further proportion of freſh Mercury, or uſing ſuch means as may make it leſs ſubject to be ſuddenly diſſolved or let looſe in the ſtomach: and in this caſe the only difficulty is to obſerve a due mean, and not run into the oppoſite extreme, by rendering it too inſoluble, from whence it muſt be proportionably inert; and yet, in that caſe, it will not be abſolutely free from danger, for as it will act by its weight as a compound, it may cauſe ſpaſms and other diſorders, in caſe it ſhould chance to lodge in the folds of the internal membrane of the ſtomach. The moſt eligible of the ſhop preparations is, Mercurius Dulcis, *viz.* Corroſive Sublimate united by triture, with three fourths of it's weight of freſh Mercury, and re-ſublimed till the union is ſufficiently cemented. Sometimes the number of ſublimations is carried to ſix or ſeven, or farther, when it is called Calomel, or the Mercurial Panaceon; but if the proceſs be well performed, three times are enough, the other ſublimations only ſtrengthen the union ſo far, as in a great meaſure to elude the ſolvent powers of the body, and the objection to Mercurius Dulcis is, it's being already too inſoluble. All the directions given in ſome Diſpenſatories for waſhing in water, and digeſting in ſpirits of wine, in my opinion add little to the preparation; for if Mercurius Dulcis be well prepared, it is inſoluble in the whole, or in part, either in water or ſpirits.

The different Precipitates, as well from the muriatic as the other acids, however diſtinguiſhed by name or colour, are nearly alike in their effects. To go through them all, would only lead into an endleſs detail and uſeleſs repetition. They are all acrid and ſtimulant, and ſometimes produce very ſtrong effects, given in ſmall quantities, when they meet with conſtitutions that thoroughly diſſolve them; hence are in general rather uncertain in their operation. They are little uſed in common practice, but I think by farther elaboration might be made to produce medicines of very great ſervice, as they are in a ſtate to be acted upon by vegetable acids and other ſolvents, which touch not the Mercurial particles, but in a ſtate of great diviſion. The acetous acid, when it meets with Mercury in this ſtate of diviſion, whether it be cauſed by trituration, fire, or precipitation, reduces it, aſſiſted by a proper degree of heat, into a ſalt much lighter than that made by the mineral acids, and different from theſe in being flaky or in ſmall thin ſcales. The firſt mention we have of this proceſs is in the Theatrum Chymicum, a work, publiſhed at Straſbourg in 1613; this was afterwards improved by Margraaf, and carried to a great height by Keyſer, at Paris, ſo as to have his preparation received by the King of France into the military hoſpitals there. The method he uſed, was firſt to reduce Mercury to a black powder by trituration, with a machine invented for that purpoſe, by M. Vaucanſon, and then to diſſolve this in diſtilled vinegar. This is a preparation that may be uſeful in ſome conſtitutions;

it is not very ſoluble in water, acts rather ſlowly, often running off by the inteſtinal tube, with gripings, and a conſiderable degree of irritation, which if it does not it is apt to ſalivate, though leſs violently than the mineral ſolutions.

There may be ſeveral other preparations not mentioned herein, but they are all in ſubſtance reducible to, or come under the above heads, being only modifications of the above proceſſes. Mercury united or combined with oily, ſaccharine, gummy, reſinous, alcalious, or acid ſubſtances.

It muſt be confeſſed that there are ſeveral of the above preparations from whence conſiderable advantages have been, and may be drawn, when exhibited with ſkill and judgment by able men; but I will venture to ſay, we are far from being arrived at that degree of perfection in this matter the ſubject is capable of. That Mercury given in very ſmall quantities will cure the diſorder is inconteſtable; unfortunately the preparations found by experience to be the moſt active and efficacious, are too corroſive to be uſed with ſafety in ſufficient doſes, but when they can be taken, they cure with the ſame certainty as any other preparation given in ever ſo large a quantity; hence it is plain, that two ounces or more of Mercury, in the four or ſix ounces or greater quantity of ointment, uſed externally, or half an ounce, more or leſs, of Mercury in the quantity of Calomel uſually given inwardly for a cure, are not indiſpenſably neceſſary, ſince the ſame effects are produced from twenty or thirty grains differently prepared: and when we find the diſorder give way to a different preparation of Mercury, after a firſt or ſecond has failed, ſince the cure is ſtill effected by Mercury, only differently modified; may we not reaſonably conclude, that the ſubſtantial curative part is in the Mercury, and that the proceſs only ſerves to draw forth it's virtue, ſo that it may come to be applied by the powers of nature in the body? And ought not theſe conſiderations to put practitioners upon finding out ſome other preparation of Mercury, wherein it's antivenereal virtue may be equal or ſuperior to what it is in the more corroſive preparations; and yet, the too great cauſticity or deleterious quality of theſe be avoided? For I believe it will hardly be contended, I am ſure it will never be proved that theſe properties are inſeparable, ſince my own experience has convinced me of the contrary.

To obtain this great end, it is not ſufficient that Mercury be only extremely divided, it ought alſo to be uniformly and regularly ſoluble in the body, and miſcible with the fluids, ſo as to circulate therewith in the minuteſt capillary veſſels, and penetrate like an inſenſible vapour, into the fineſt part of the cellular ſubſtance, or wherever elſe the venereal poiſon may be lodged, to operate thereon and deſtroy it in it's principle. To effect this, as I have juſt ſaid, ſo large a quantity as is generally imagined, is far from neceſſary: for why ſhould we ſuppoſe nature leſs powerful in it's ſalutary than it's noxious productions? What ſtrong effects do we not experience from the ſmalleſt quantity of matter in the more active poiſons, the bites of venomous creatures, the variolous and peſtiferous miaſmata? nay, the venereal virus itſelf, is it not imperceptible by our niceſt ſenſe? Remedies however proper in themſelves often miſs their effect, by being given in too large quantities, or in their qualities being too ſtimulant; ſince thereby they will be apt to ſolicit a diſcharge by ſome of the groſſer outlets, by which their whole force will be exerted on particular parts, and never reach the ſeat of the diſeaſe: hence in chronic diſeaſes we generally find much happier effects from powerful remedies, given as alterants, mineral waters, *&c.* which are gradually thrown into the habit, than from evacuants, however often repeated; and why ſhould not the ſame hold good in venereal caſes? If we conſider the courſe of the animal œconomy, we may form ſome idea of the reaſon hereof. The natural and moſt copious diſcharge is by inſenſible

ſenſible perſpiration. Sanctorius has computed that of eight pounds of food, upwards of five are carried off in this way: and though in more Northern climates the pulmonary reſpiration is greater, and the cutaneous diſcharge leſs than in the Southern, ſtill the latter is very great; and more diſorders ariſe from this being interrupted than moſt people imagine. Now whatever procures an habitual diſcharge in any other way, by cauſing a derivation of the humours into a different channel, interrupts the ordinary courſe of nature, diſturbs it's œconomy, and often occaſions the remedy to be prematurely carried off, which, if introduced into, and ſuffered to continue long enough in the habit, might effect the cure. And ſuppoſing when a large quantity is given, enough ſhould be taken into the ſyſtem to anſwer the intended purpoſe; from the force and violence of the other part of the medicine, the patient is exhauſted, and left in a weak and languid ſtate, ſo as to require ſome time to ſet him up again. Whereas by having ſuch a preparation of

Mercury as is regularly ſoluble, yet free from corroſiveneſs, the phyſician can adminiſter it with preciſion, adapt it to every conſtitution, and the circumſtances of each particular caſe, it is immediately conveyed into the ſyſtem, the morbific cauſe is radically deſtroyed, and nature gently ſtimulated to throw off whatever is offenſive through the proper channels, it's œconomy is never diſturbed or the patient weakened by preternatural evacuations, but finds himſelf daily improve in a freſh, healthy appearance, his habit in general mended, and ſtrengthened for the better carrying on the ſeveral functions neceſſary for life and well-being.

FINIS.

ERRATA.

In page 18, line 23, and ſome other place *for* Boerrhaave, *read* Boerhaave: page 19, lines 4 and 5, *for* αϱγυϱοσ Χύτοσ *and* ὑδϱάϱγυϱοσ, *read* ἄϱγυϱος χύτος *and* ὑδϱάϱγυϱος: page 40, line 21, *dele* the Comma between Corroſive Mercury and Sublimate: page 41, line 1, *for* therefore, *read* thereof: page 44, line 20, *for* There *read* Theſe: page 48, lines 13 and 14 *dele* thereof: page 67, line 15, *for* billious, *read* bilious: page 95, line 14, *for* remote, *read* ramoſe: page 106, line 17, *for* ce, *read* cette. There are alſo ſome errors in the pointing, which the readers good ſenſe will correct, as well it is hoped, as their good nature excuſe.